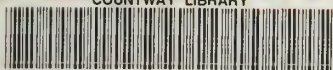


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The JOURNAL
of the
Iowa State Medical Society

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Volume XXVIII, January to December

1938

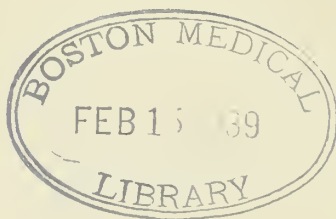
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The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

JANUARY, 1938

No. 1

HYPERINSULINISM AND HYPOLYCEMIA IN INFANTS AND CHILDREN*

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I want to talk to you about a subject which was one of Dr. Marriott's last clinical interests. Unfortunately, it had been stated in a number of newspaper articles that Dr. Marriott discovered hypoglycemia and hyperinsulinism. Of course, he did not, and at no time did he ever lay claim to discovering those conditions. I think, however, he was the first to utilize dextrose and insulin for fattening athreptic infants. He was vitally interested in the subject of hypoglycemia and urged us to study the material seen at the St. Louis Children's Hospital over a period of years, with the idea of learning more about it. We have done this, and I would like to summarize that study for you.

First, I think we will have to define the term "hypoglycemia." Until a few years ago, the blood sugar methods most commonly used were methods like the Folin and Wu method, depending upon the preparation of protein-free filtrates, with tungstic acid, then the determining of reducing substances with some copper containing reagent. It has been shown that when whole blood is so analyzed, when there are apparently 100 milligrams per cent of dextrose present, actually there are only about 80 milligrams per cent of true sugar present; there are 20 milligrams per cent of other substances. When plasma or serum is treated in that manner, the true value is about ten milligrams per cent less than the apparent value. However, by the use of different precipitating agents, zinc hydroxide in particular, one can get values which measure "true" dextrose.

With those points in mind, we felt that the dividing line between the low normal blood sugar and the real hypoglycemic zone should be about

50 milligrams per cent true sugar. That is the dividing line which we used in studying our cases. Perhaps the best approach is to consider all the ways and means by which the blood sugar is kept constant. We know there are really only two ways of increasing blood sugar. One is the normal method, by having it come to the systemic blood by way of the liver, and the other is the abnormal method of putting it directly into the vein or subcutaneous tissues. Blood sugar may come from the liver primarily as a result of food absorption as dextrose may circulate through the liver and come through into the systemic blood, or liver glycogen may be mobilized and appear as blood dextrose, or amino acids may be absorbed from the gastro-intestinal tract, or may be released from muscles to increase blood sugar. Glycerol of fat is a precursor substance, and lactic acid from the intestinal tract would also be a precursor substance.

Stimulants for the passage of liver dextrose into the systemic blood seem to be three in number: a low blood sugar, the effects of the epinephrine and the pituitary hormone, and asphyxia. Blood sugar leaves the blood stream to become oxidized in the tissues, insulin being essential, but the thyroid gland, muscular activity and the body temperature also influence the rate of oxidation. It may leave the blood stream to be converted into liver and muscle glycogen where the stimulants of such transformation are high blood sugar, insulin and oxygen. It may be converted into lactic acid as the result of glycolysis, or it may be lost from the body by way of the kidney.

On the basis of such a conception, we can classify patients developing low blood sugars in a simple manner. First we have cases of true hyperinsulinism, that is, insulin excess. There are four types: the islet cell hypertrophy or hyperplasia; islet cell tumors, something which is very rare in infants and children; physiologic hyperactivity of the islet cells; and insulin administration. Next we have examples of relative hyperinsulinism; one type, due to a lack of precur-

* Presented before the Eighty-sixth Annual Session, Iowa State Medical Society, Sioux City, May 12, 13 and 14, 1937.

sor substances, either liver glycogen or substances coming from the gastro-intestinal tract, and a second group in which the low blood sugar develops because of a lack of opposing secretions, particularly epinephrine and pituitary hormone, or because there has been some interference with the regulatory centers after a central nervous system injury or anomaly. Finally, we have a third group which combines any one of the subgroups in one and two.

This gives you some idea of the clinical etiology of this third group. Sometimes pure starvation, failure to take in food, leads to hypoglycemia. Especially partial starvation, when associated with vomiting and diarrhea, and particularly with infection, leads to hypoglycemia. We occasionally see chronic starvation, the result of prolonged infection or cardiorenal disease, especially when there is edema, lead to hypoglycemia, and sometimes malignancy does. A patient may have a break in the carbohydrate regulatory mechanism and may show either hypo- or hyperglycemia. Finally, we have a few cases in which we just cannot put our finger on the true cause of the hypoglycemia, which we call cryptogenic until we learn more about them.

I am going to talk about only two groups, the one type of true hyperinsulinism which is the result of physiologic hyperactivity of the islet cells, and another, the group in which there tends to be recurrent symptoms of hypoglycemia, due presumably to a lack of opposing secretions. Those are the two most important groups which you are likely to see in pediatric practice.

There is a strong tendency for a rapid fall in the blood sugar of normal, newborn infants, and values as low as 20, 25, 30, 35 or 40 milligrams per cent of true sugar are usually encountered on the first day of life; they rise on the second day and on the third day, and by the time the fourth, fifth or sixth day has been reached, the blood sugar tends to be above what we arbitrarily call our hypoglycemic line, and from there on they continue to be in this normal zone. Until recently we have not appreciated the fact that considerable hypoglycemia is a normal state in newborn infants for the first few days of life.

We had a series of seven babies born of diabetic mothers, showing these astounding behaviors of blood sugar. In one the cord blood was 308 milligrams per cent, and in two hours the blood sugar had dropped to 22 milligrams per cent; two hours later it was down to six milligrams per cent—in four hours after birth a fall from 308 to six. In another instance the drop was down to four, the original level being, however, fairly normal. We must remember, then, the

extremely rapid drop, characteristic of some of these babies, but we must also notice another astounding fact. It takes only about three days for such infants to become completely adjusted, and from that time on their blood sugars are normal throughout the remainder of the nursing period. This is the time then, when symptoms are likely to be encountered and they are sometimes so severe that they may be fatal. They include, at first, restlessness, then stupor with cyanosis and twitching and circulatory collapse, quite easily and completely relieved by one of two procedures. These infants have fine stores of glycogen in the liver; we expect them to have. This glycogen is readily mobilized by epinephrine; three minims of epinephrine within twenty to forty minutes will increase the blood sugar level by 20 to 30 milligrams per cent. Dextrose would accomplish the same thing, and even more safely and more effectively. It is apparently during these three days of life that one has to be particularly careful to prevent fatal symptoms from occurring. Two of the infants in this series of cases were seen two months ago. They are both three years of age now. Their dextrose tolerance test curves show a slightly abnormal fall at the third and fourth hours. Insulin tolerance tests surprisingly give perfectly normal results. I rather expected that they would be resistant to insulin administration, but they are not. Apparently they are getting along as perfectly normal children.

As far as the other group is concerned, we have children who periodically develop symptoms of hypoglycemia. They may be perfectly normal for weeks or months. Then, usually when they have missed a meal or when they develop an infection, particularly when they vomit and have a poor appetite, they first become nervous and jittery, and then they are likely to have a convulsion and become unconscious following the convulsion and remain that way for some time. They eventually recover and remain normal for a long period of time, when there is a recurrence of such symptoms. We have five such children in whom studies were made. In three the studies were in detail. If you give such children a quarter of a unit of insulin per kilogram of body weight and follow the blood sugars at intervals of twenty minutes, forty minutes, sixty minutes, ninety minutes and two hours, you have some very interesting blood sugar curves. The original level of sugar, which may be quite normal or slightly subnormal, falls until it almost disappears. Reactions occur, and the blood sugar has to be bolstered by some artificial means. In contrast to the babies born of diabetic mothers, epinephrine is not very effectual in such children. One gets a

very slight or transient rise in blood sugar following its administration, and usually, to control the hypoglycemia induced by this small dose of insulin, one has to give intravenous dextrose.

As far as we can tell, this checking of the fall of blood sugar and its actual reversal is due to the secretion of adrenalin which occurs at such a time, causing mobilization of liver glycogen. Response to adrenalin depends apparently to some extent upon the pituitary hormone. It is our belief that this type of patient is defective as far as either the adrenal mechanism or pituitary mechanism is concerned, probably both, and that, also, he is likely to have a poor storage of liver glycogen.

There is one more thing I would like to call to your attention. In one instance, we had a normal response in a child who had previously been hypoglycemic. The second time he was examined he had presumably outgrown this tendency. However, that does not seem to be what one can expect to rely on, because in the case of R. R., the first four observations were made in the spring of 1934, and identical observations were made in 1937, three years later. In the case of L. C., the first observation was made, also, in 1934, and repeated in 1937. What is more interesting than that, perhaps, is this: while we were trying to get information as to the condition of this boy during intervals when he had no convulsions, we asked the mother about his symptoms, and she assured us he was perfectly all right, but during the insulin tolerance test he began to be nervous, began to perspire, got very fidgety, and could not keep his attention on anything. We asked his mother whether he was ever like that, and she said, "Yes. His father is just like that, too." She volunteered that information. We had him (the father) come in the next week, and Mr. L. C. is of the same type. He was not tolerant to the administration of insulin. A very small dose sent him down into the reacting zone.

Since this time we have also encountered another family in which the father and son are of this same type and become hypoglycemic, presumably due to the lack of opposing secretions. I realize that none of this is new, but perhaps you see in it what we do. By going back to fundamentals, trying to study the normal factors controlling the blood sugar, and then picking out the abnormal factors in our patients, we not only can classify such patients in a rational manner, but when we once get them catalogued and classified, we are prompted to study them along lines which might be fruitful, and often the proper type of therapy suggests itself. I should say also, in the minds of many, the diagnosis of hypoglycemia or hyperinsulinism

means either islet cell tumor or the necessity for pancreatectomy. In all of our experience, and we have had in all these groups some 250 instances of hypoglycemia, we have encountered only one in whom we had reason to believe that there was real pancreatic pathology. After careful study and investigation of the pancreas, we failed to find a tumor and when Dr. Graham took out as much of the pancreas as he could, this child was really improved. For the past three years since this subtotal pancreatectomy, she has had no symptoms of hypoglycemia, none of the convulsions which were frequent before, and on each examination we found normal blood sugar. Prior to that time she had persistently low blood sugars affected only slightly by food. As far as we can see, in infants and children, most of the cases of hypoglycemia will not be of the surgical type.

DANGERS IN THE USE OF PROTAMINE ZINC INSULIN*

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Protamine zinc insulin has been recommended to replace ordinary insulin, in whole or in part, in the treatment of diabetes mellitus. The dangers in its use have not been sufficiently emphasized. Its use in the treatment of children with diabetes mellitus has led to serious and even fatal accidents. From an intensive study, which has been in progress in the Department of Pediatrics of the College of Medicine for the past year, the superiority of this product over regular insulin has not been established. In view of the difficulties and dangers observed, this summary is presented as a warning against the use of protamine zinc insulin unless it is employed with a full knowledge of its dangers.

Among the advantages which have been cited for the use of protamine zinc insulin as compared with the regular insulin are the following: the smaller amount needed to maintain adequate control, the fewer number of injections required, the fewer and less severe reactions, and the increased sense of well-being of the patient.

In this clinic, adequacy of control has been interpreted to mean a state characterized by freedom from glycosuria of any degree throughout the twenty-four hours, with avoidance of hypoglycemia; the ingestion of a diet of known composition, designed to meet completely the patient's needs for growth, tissue repair and full activity; the assurance of the above status through daily urinalyses representative of the total excretion;

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frequent estimations of the blood sugar level both before and after meals and insulin; and progressive physical measurements to serve as a guide to the adequacy of the diet.

Over two hundred children have been observed in this clinic under such a regimen, and their excellent progress in all regards has attested to the value and the feasibility of its employment. Sixty per cent of the group have visited the clinic several times within the past eighteen months. The patients to receive protamine zinc insulin were chosen from this number. At the time the study was initiated, it was believed that it would be possible to transfer the majority of patients to this newer form of therapy; the procedure employed was designed to offer exact information which would simplify the substitution of the zinc product for the ordinary insulin which each patient had been receiving. Prior to the change in the form of insulin, each patient was observed for weeks on regular insulin, and the dosage adjusted so that the level which maintained normal blood sugar fluctuations throughout the twenty-four hours was accurately determined. The constancy of this dose was established through numerous subsequent observations. During this time, the distribution of food throughout the day was adjusted so as to be more favorable for the administration of the slower acting protamine zinc product. Thirteen patients have been so studied, giving a total of 984 patient days, 3,336 blood sugar determinations, and approximately 4,000 urinary examinations.

Our results with protamine zinc insulin, on the whole, have been very disappointing. It was found that the preliminary management as described in the foregoing led in itself to a reduction in the insulin requirements. Subsequent transfer to protamine zinc insulin resulted in no further reduction. Mild cases, requiring a total dosage of twenty units or less, could be satisfactorily regulated on one morning dose of protamine zinc insulin. The more severe cases, requiring a higher insulin dosage, could not be adequately controlled on one dose of protamine zinc insulin. These cases could be regulated on one dose of protamine zinc insulin supplemented by one or two doses of regular insulin. This plan is complicated and is not practical.

When overdoses of regular insulin have been given, one usually easily recognizes the resultant insulin shock and the condition usually responds rapidly and completely following the administration of dextrose by mouth. The shocks observed following overdoses of protamine zinc insulin have developed insidiously, have been associated with unconsciousness and convulsions, have responded

slowly to therapy, and have most frequently required the intravenous administration of dextrose. The physical appearance and non-response of these patients in protamine shock have been a cause for great alarm for attending physicians who had been thoroughly accustomed to the manifestations of shock from regular insulin. These observations correspond to those reported by other investigators. Physicians and parents also have told us of observing this condition. No subjective improvement was noted in our patients while they were receiving protamine zinc insulin. On the old plan, their morale had been extremely high, and on the new plan no assurance of easier control was given. The patients had a greater tendency to be surly, uncooperative and slightly lethargic because of the more frequent hypoglycemic levels.

Few of the patients studied here on protamine therapy have been sent home under that form of management. Of these few, one has recently died at home under circumstances which strongly indicate that the death should be attributed to hypoglycemia. While in the hospital, with its facilities for detailed laboratory control, the boy had remained adequately controlled with no insulin shocks. Control in the home community is associated with many unpredictable factors. Variations in the amount of exercise, the presence or absence of low-grade upper respiratory infections, and slight irregularities in diet serve to disequilibrate the patient. With regular insulin, detection and correction of shock are predictable. The slow and continued absorption of the protamine zinc insulin complicates the situation doubly. First, by the time the shock has manifested itself, the body's defenses against shock may be so exhausted that only continued intravenous dextrose will suffice. Second, there is likelihood that the protamine insulin is still being absorbed as the shock manifests itself, and that its effect may be manifested or even augmented for hours after the appearance of the shock.

This danger of shock has been obviated by some physicians by allowing the presence of glycosuria. Whereas this will probably help to prevent shock, such management cannot be considered as adequate treatment of the diabetic child. This level of control contributes to the development of acute diabetic emergencies, and is a forerunner of the degenerative tissue changes characteristic of uncontrolled diabetes. With regular insulin it is possible to maintain even the unstable diabetic child in a fair state of normoglycemia, with glycosuria as an unusual event. To attempt to do as much with protamine zinc insulin is far more difficult, and is associated with grave danger.

It has been concluded that the diabetic child

who is to serve as a candidate for protamine zinc insulin therapy is the exception rather than the rule. Until an agent safer than this has been developed, it seems foolish to turn away from a routine which has proved highly successful for its purpose to one which can do no more, and which carries the likelihood of danger or even of death.

FULMINATING MENINGOCOCCUS SEPTICEMIA WITH BILATERAL ADRENAL HEMORRHAGE*

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Probably no acute infection outranks the above in suddenness of onset and rapidity of course. Here the adjective fulminating, "like a stroke of lightning," is appropriate. We add the following case report to the fifty-five or sixty already described in the literature.

J.D.K. was a boy three years of age. His parents stated that at twelve o'clock noon of March 20, 1937, he appeared perfectly well. On awaking from his nap at 2:00 p. m., he complained of being chilly and thirsty. His mother noticed some slight twitching of the arms and legs. His condition continued about the same until 7:00 p. m. when he became worse, and his parents in alarm brought him to the hospital. He was admitted at 9:25 p. m. Dr. A. D. James, who examined him on admission, found him exceedingly restless. There was considerable twitching of the arms and legs. His skin was cyanotic. There was moderate stiffness of the neck and a slight Kernig's sign. The chest and abdomen were negative. The temperature was 106 degrees.

In a very short time the child became pulseless, and the cyanosis increased. Dr. L. F. Hill was called in consultation. At this time numerous petechial spots began to appear on the skin. Drs. Hill and James reported that these came out with extraordinary rapidity. One could see them develop as one watched. A spinal puncture disclosed clear fluid under no increased pressure, with a cell count of fourteen cells per cubic millimeter. Death occurred at 10:40 p. m., making the total duration of illness about nine hours. A clinical diagnosis was made of septicemia, probably meningococcic.

The writer performed an autopsy the next morning. The body was that of a well developed male child three years of age. It was covered with innumerable petechiae, on the face, trunk, and extremities. Examination of the viscera showed

only one gross pathologic change, but that was most striking. Both adrenal glands were engorged with blood, and their color almost black. This appearance was found to extend entirely through the glands. The adrenal vessels were dissected, but no thrombosis could be found. Microscopic sections showed massive hemorrhage in each gland, with almost complete destruction of both cortex and medulla. Fortunately, before embalming, blood had been aspirated from the heart and placed in nutrient broth. In forty-eight hours, this showed a considerable growth of a gram-negative, somewhat pleomorphic diplococcus. Subcultures on ascitic-hormone agar showed a continued growth. However, a contaminant appeared, and attempts to isolate the coccus failed. There was little question, however, that the organism recovered was a meningococcus.

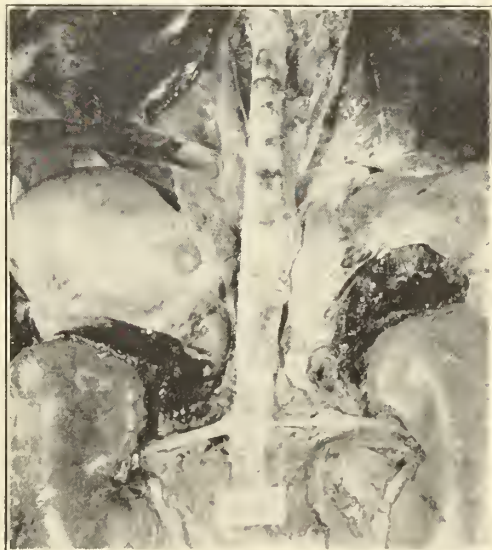


Fig. 1. Postmortem appearance of the adrenal glands.

The clinical picture of this infection has been described in detail by Aegerter, as the Waterhouse-Friderichsen syndrome.¹ His review of the literature disclosed fifty-five cases similar to the one which he reported. Long considered as examples of acute morbus werlhofii or of hemorrhagic smallpox, their true etiology remained a mystery until very recently. McLean and Caffey² found that the meningococci can be demonstrated in blood smears taken from the purpuric lesions. The clinical picture is so striking that a diagnosis may be made from that alone; sudden onset, marked cyanosis, and a startlingly rapid spread of petechiae over the body. The spinal fluid is, in general, not remarkable. Bilateral hemorrhage

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into the adrenal glands is a constant postmortem finding.

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INTRATHORACIC GOITER*

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The surgeon encounters this condition in one of the following ways; first, he makes the diagnosis preoperatively and has the size, shape and location of the mass fairly accurately diagnosed, and plans his operation accordingly; second, he is taken unawares and finds it at operation; or third, he completely overlooks it at operation, removing only the cervical goiter he finds, leaving the offending tumor in the mediastinum or under the clavicle, where it may slough and disintegrate if he has tied up the inferior thyroid vessels on its connecting side. This accident results in fatal mediastinitis.

This problem will be considered under the following eight steps:

1. Definition.
2. Location of the goiter.
3. Nature of the goiter.
4. Effects of the tumor.
5. Etiology of the condition.
6. Symptoms.
7. Differential diagnosis.
8. Treatment.

Definition: Intrathoracic goiter is simply thyroid tissue within the superior mediastinal cavity. It is called complete if the greatest axis of the tumor is below the superior thoracic opening, and incomplete if the converse is so. Subclavicular goiter is not within the thorax, but lies below the clavicle. Intrathoracic goiter is called fixed when it cannot be dislodged from the thorax by the patient, and plunging when it may and does appear at times in the neck, as the result of coughing or straining.

Location: Its home is the superior mediastinum, which is the space left in the thorax by the non-approximation of the two pleurae and above the pericardial sac, behind the sternum, and in front of the upper thoracic vertebrae. Its normal contents are principally the aortic arch, innominate vessels, carotid and subclavian arteries, jugular veins, trachea, esophagus and the vagus,

phrenic, and recurrent laryngeal nerves. Its normal area is small, but its capacity under pressure is about the size of the upper thorax. It is entered from above through a bony opening encircled by the top of the sternum, two first ribs, and the front of the vertebral column: which opening is reniform in shape, sloping forward, about four inches wide and two and one-half inches from front to back.

Nature of the goiter: All tables of statistics agree that it almost invariably is adenomatous in nature. Lahey finds no case of intrathoracic goiter in 4,363 cases of acute exophthalmic hyperplasia, or Graves' disease, but 21 per cent of intrathoracic goiter in 5,131 chronic adenomas. These thoracic adenomas may be smooth or nodular, solid or cystic, and are susceptible to all the degenerative changes that may occur in cervical goiter, such as calcification, hyaline degeneration, hemorrhagic or colloid cysts, malignancy, etc. Two-thirds of them occur on the left side. Fortunately they are surrounded by a capsule and when benign are but loosely attached to the surrounding structures.

Effects of the tumor: The effects are largely pressure disturbances caused by a growing mass within a bony cage which cannot give, and the proximity of this pressure to vital mediastinal structures which were named above. Normal mediastinal pressure is about atmospheric pressure minus the pressure exerted during normal lung retraction. Rising pressures affect respiration by tracheal compression, and mechanically make air flow in and out of the thorax more difficult, and can by sudden pressure increases shut off respiration completely. This same pressure if applied to the circulation may prevent the venous return flow of blood to the thorax from the head, neck and arms, or obstruct arterial output to the same areas. Nerves may likewise be compressed with resulting irritation or paralysis to their distribution.

Etiology of the condition: Lahey has given us our generally accepted hypothesis of its production. It is roughly as follows. The thyroid gland is loosely supported in the neck by suspensory ligaments, tracheal adhesion, and blood vessel support. When enlargement of one or both lobes occurs the ribbon muscles in the front of the neck restrain forward bulging; cervical fascia, trachea, esophagus and vertebrae restrain backward growth; swallowing moves the growth up and down countless times; and the tumor is guided downward by the sternohyoid muscle, which attaches to the top edge of the back of the sternum. This aided by gravity and the inclined plane of the thoracic inlet, coupled with the lack of any marked restraint from below, allows the gradual descent of

*Presented before the Eighty-sixth Annual Session, Iowa State Medical Society, Sioux City, May 12, 13 and 14, 1937.

the mass until the thoracic inlet is reached and later passed. In the early stage a return to the neck is easy because of the size of the tumor; but growth of the goiter, a sudden hemorrhage within it, or a rapidly increasing tumor, makes the exit from the thorax difficult or impossible. Less than one per cent of these adenomas become completely intrathoracic.

Symptoms: As suggested before, symptoms are largely compression phenomena. Toxic symptoms, the well known chronic thyrotoxicosis syndrome which is familiar to us all, may be present, but all goiter surgeons emphasize their secondary place in the picture and many of them stress their rarity. This is essentially a disease beyond the fourth decade of life, because of the years necessary for the goiter's descent into the chest. The respiratory signs appear first and are constantly present. They begin as an effort dyspnea which soon becomes a marked inspiratory stridor, and can be heard easily by persons nearby. A hacking cough and choking spells at night, which make suffocation seem imminent, appear. The suffocation distress disappears after a change in the bodily position and the expulsion of a mass of heavy mucus which has collected below the tracheal compression. The patient soon discovers when he is lying down if he turns on the side which stretches his trachea more tightly over his goiter mass, that breathing becomes much more difficult. This important sign was first described by Lahey. Dyspnea often becomes so great that the patient cannot recline and he must sleep in a chair, sitting up with his head tipped into the position which gives him the most tracheal room. All of the above symptoms are due to diminution of tracheal size either by deviation, denting or collapse. Hoarseness as a symptom has been variously interpreted. Higgins in analysing one hundred cases claimed recurrent nerve palsy in 13 per cent found before operation, while Lahey claims it is very rare, and when found is suggestive of malignancy. Hoarseness is still possible due to chronic pressure tracheolaryngitis. Circulatory signs are next in importance. They are primarily blood vessel interference affairs, and only toxic very late in the picture. Pressure on the thoracic vessels causes venous stasis of the thorax, leading to heart stasis, then cardiac dilatation, followed later by myocardial degeneration. Graham's coinage of the term "superior vena cava syndrome" is applicable here, and it symptomatically is shown by cyanosis, edema of the face, head, neck and possibly of the arms, marked turgescence of the obstructed veins, headache, dizziness, nosebleeding and ringing of the ears. When the overburdened heart fails, auriculoventricular block or

fibrillation occurs, and death follows in typical congestive heart failure, or by a sudden coronary accident. X-ray evidence is third in importance. Palmer and Jones studied one hundred cases, and drew the following conclusions: 75 per cent of them could be clearly recognized on films as intrathoracic goiter; 25 per cent showed no x-ray shadow of the tumor; 97 per cent of them showed tracheal deformity. When x-ray shadows occur they are due to lime deposit in the tumor, which is of much more importance in tumor recognition than either size or weight of the mass. Tracheal deformity is manifest by curving or bowing from the normal mid-line position and by diminution in tracheal diameter in some axis, or in change in tracheal shape. Pictures of the trachea in both directions are necessary, and stereoscopy is often of great aid. Dysphagia is rare. Percussion of the upper anterior thorax may show dullness, but its absence is undependable.

Differential diagnosis: In the differential diagnosis of this condition we must consider the following possibilities:

1. Aortic aneurysm, as shown by a positive Wassermann reaction, a chest tumor that is expansile and pulsating; often a tracheal tug, which is never present in goiter, and there is here a constant angle between the tumor and aorta, which is unaffected by breathing or swallowing; this of course, is shown by fluoroscopy.

2. Thymus tumor is very rare in middle-aged adults.

3. Hodgkin's disease usually shows multiple glandular enlargements over the body, and the chest masses are at the lung hilum, not higher up. Blood studies and biopsy of a surface lymph gland should show the diagnosis.

4. Intrathoracic dermoids are dense smooth shadows, lower down in the thorax, and they have no cervical connection so they are unaffected by swallowing. They are most common at puberty.

5. Esophageal diverticulum has its symptoms connected with eating. Foul breath often occurs, and it can be readily diagnosed by seeing the esophagus fill with barium solution under the fluoroscope.

6. Lung tumor begins in pulmonary or bronchial tree tissue, not in the mediastinum. They are usually much denser than goiter, they irregularly invade lung substance, and hemorrhagic sputum is common.

7. Pott's disease of upper dorsal vertebrae can be correctly diagnosed by lateral and stereoscopic x-ray plates, showing involvement of the vertebral bodies.

8. Mediastinitis is usually an acute infection, either spreading down from the neck or out

through the pleura, or possibly a part of general sepsis. Unless its presence is rapidly appreciated and suitable drainage instituted, death intervenes before the need for goiter differentiation occurs.

9. The so-called asthmas should be mentioned, namely cardiac, nephritic and idiopathic or allergic. Their differentiation should be very simple.

Treatment: The treatment is always surgical; that is, when there is anything left to save. The sooner these goiters are recognized and removed, the better the outlook for the patient. If the heart has been ruined by overwork, and fibrillation or congestive heart failure has occurred, the future is not promising. Radiation, with either x-ray or radium is to be strongly condemned because chronic degenerative thyroid tissue is not sensitive to radiation. Much more harm than good can easily be done, and much valuable time can be wasted. Mortality figures vary with the many surgeons who are willing to accept these cases, but the rate can probably be safely set at ten per cent, rising or falling with the willingness of the surgeon to accept the larger goiters and the poorer cardiac risks.

BREAST TUMORS*

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The breast is a racemose gland composed of glandular, fibrous and fatty tissue, subject to invasion by practically all varieties of tumor which occur in other parts of the body. It receives its blood supply chiefly from the axillary internal mammary and intercostal arteries; and is richly endowed with lymphatics which invite the invasion of infection, and hasten the dissemination of malignancies. The breast also undergoes a complicated physiologic change which takes place at puberty, during lactation, and is followed later by a retrograde change in cellular activity which offers additional possibilities for the inroad of disease.

There is a great diversity of opinion and of the nomenclature of the pathologic lesion of the breast. Cheatele has given a very practical classification wherein the hyperplasias and neoplasias are classified according to their origin. Of epithelial origin, he places in the benign list, the cyst, the fibro-adenoma, the pure adenoma, and the papilloma. In the malignant classification he lists carcinoma. Originating in the connective tissue, he places in the benign list, the fibro-adenoma, the fibroma, the lipoma, the myxoma, and the angioma. In the malignant class he places sarcoma.

Perhaps the most common of the benign epithelial tumors is the so-called simple cyst. It occurs in the breast of either sex, at any period from infancy to old age, and varies in size from less than a centimeter in diameter to one large enough to contain 500 cubic centimeters of fluid. The etiology of cystic disease has been a subject for considerable debate, but of late years there has been a growing conviction that the cause of cystic change would be found in the disturbance of the hormone balance. Work by Lewis and Hartman on monkeys, and by Burrows on mice, indicates that cystic disease may be produced experimentally at will by the administration of estrin. This would indicate that the problem of etiology may be solved along these lines.

Cysts may be multiple or single as the "blue domed cyst of Bloodgood", but frequently a more careful pathologic study will show a single cyst with numerous small cysts about it. Their contents are usually a clear fluid, but may be dark due to hemorrhage. These cysts may be round or nodular, hard, soft or fluctuant. Transillumination of the breast containing a cyst reveals a translucency in the cyst unless a hemorrhage is present or unless degeneration has taken place. A microscopic examination reveals a fibrous wall lined with epithelium. While these cysts are referred to as being benign in character, we should be mindful of the fact that occasionally in the blue domed cyst the microscope will reveal a carcinoma of the cyst wall.

There is a type of chronic proliferative mastitis, the so-called Schimmelbusch's disease, which many have considered a pre-cancerous condition, while others have believed the disorder to be benign. This neoplastic disease is referred to as a "shotty breast," and is composed of many firm nodules scattered through the breast. The disease is frequently bilateral and diffuse, or it may involve only a single quadrant. Microscopically, the changes found are chiefly a proliferative mastitis with areas of cystic change. This type of breast is frequently painful, does not respond well to medication, and is best treated by the removal of the affected area or by a simple amputation.

Fibro-adenomas are solid tumors composed of fibrous and glandular tissue which may be round or lobular, are freely movable, are not attached to the skin, and do not cause a retraction or produce a discharge from the nipple. The edges are defined, and the tumors are generally of a firm consistency. They may be single or multiple, and occur in one or both breasts. As a rule there is little or no pain, but in some instances the pain is very severe and may be referred to the shoulder and arm, and is more intense before and during

*Presented before the Eighty-sixth Annual Session, Iowa State Medical Society, Sioux City, May 12, 13 and 14, 1937.

menstruation. They occur more frequently in girls at or soon after puberty, but may develop in the older women. Statistics show this to be the most common breast tumor between the ages of fifteen to twenty-five years. While carcinoma occasionally develops before the age of twenty-five years, it is differentiated by being a single lump, is not lobulated, is firm and becomes attached to the surrounding tissue at a very early stage. Cysts may have a certain amount of firmness, but transillumination will reveal a translucency showing the true character.

Adenomas are the only benign tumors having their origin specifically of breast tissue. They are masses of breast tissue having a more or less abnormal epithelial arrangement, are well walled off, and easily removed by blunt dissection. Their cause is not definitely known, but recent writers regard them as a result of exaggerated or unbalanced physiologic processes associated with the menstrual cycle, and, therefore, with an etiology closely related to that of cystic disease. While these neoplasms are considered definitely benign, Lewis refers to one form, the myxo-adenoma, as occasionally being the seat of sarcomatous degeneration. Adenomas are encapsulated, freely movable, are usually not painful, and produce no disturbance except in a mechanical way.

Papillomas occur as intracystic and introductal outgrowths from the epithelial linings and the underlying connective tissue stroma. They are found incidentally on opening cysts, or are suspected in breasts which have a serous or bloody discharge from the nipple, although papillomas do not always produce a discharge from the nipple. They are found in chronic mastitis, are usually multiple, and may be located in any portion of the ducts. The gross appearance of these breast papillomas is similar to that of papillomas in any other location so far as structure is concerned. They not infrequently take on retrograde changes, become malignant and metastasize to distant parts of the breast. The treatment is a simple mastectomy, or if the tumor mass is small, excision will be sufficient provided the microscope does not reveal a malignancy.

Carcinomas constitute 97 per cent of all malignancies of the breast. They are principally of two varieties: scirrhus and medullary. They may be primary or develop from degenerative changes in other lesions; such as trauma, chronic irritation, nutritional skin disturbances, Paget's disease, and benign tumors.

Many theories have been advanced, and a vast amount of research work has been done, but the true etiology of cancer is still unsolved. In the scirrhus cancer the cells are in small strands or

islands surrounded by dense fibrous stroma, which give it a firm, hard feeling. This type is slow growing and slow to metastasize. The medullary cancer is softer and less resistant, containing large masses of malignant cells surrounded by comparatively scanty stroma. It grows more rapidly and metastasis takes place early. Broder made a great contribution to our knowledge on the subject when he found a method of grading cancers according to their tendency to metastasize. The information gained by this method is of great importance in determining the type of lesion present and the method of treatment to be instituted, which in turn enables us to arrive at a more definite conclusion as to the prognosis. The spread of cancer is largely by the lymphatics and the invasion of surrounding tissue.

Early diagnosis is of paramount importance as illustrated by the report of one authority, who in the study of more than 2,500 cases which came to operation, found that when the clinician waited for classical signs and symptoms of cancer of the breast, his diagnostic ability for cancer was nearly 100 per cent; but that the postoperative length of life is very short. However, if he attempts to recognize small cancer by exploring chronic irregularities which do not disappear in a very short time, he finds his positive clinical diagnoses are not nearly 100 per cent correct, although his therapeutic advice may be perfect. Suspicious signs of breast cancer are a bloody discharge from the nipple, especially if a lump can be palpated; a lump in or near the breast or in the axilla; dimpling of the skin over the lump; any change in the size of the breast; any abrasion or excoriation about the nipple. Fifty per cent of cases of bleeding from the nipple are malignant.

Fibroma is of connective tissue origin. It is benign in character and found more frequently in younger women. It is well encapsulated and appears as a hard, circumscribed lump. The fibro-adenoma is very similar in character, but has in addition glandular structure.

Lipoma is a fatty tumor which is rarely found in the breast itself but generally develops in the fatty tissue surrounding the breast. It is encapsulated, movable, and because of its location is not difficult to diagnose. The treatment of fibroma and lipoma consists of excision of the tumor without amputation.

Myxoma is the rarest type of breast tumor. It presents itself as a single rounded tumor, usually in the upper half of the breast, and may be accompanied by edema, pain and soreness. On section it appears as a light colored jelly-like mass. Not infrequently fibrous, fatty and vascular areas exist in the growth. It originates in connective

tissue, and is usually encapsulated. A small percentage of these tumors show a tendency to become malignant, and should be treated by surgical removal followed by immediate microscopic examination.

Angioma is a blood tumor having its origin in connective tissue, and is composed of blood and lymph vessels. They are usually nodular or form a localized diffuse mass, which if lying deep in the breast, cannot be distinguished from other types of non-encapsulated neoplasms or chronic mastitis. If the hemangioma is near the surface of the skin, its character may be recognized by a bluish or purple color. It may be distinguished from cancer, which is usually of firmer consistency and attended with other signs, as fixation to underlying structure or skin, dimpling of skin, retraction of the nipple, and axillary glandular enlargement.

Sarcoma constitutes about three per cent of all malignant tumors of the breast. It is found more frequently in young adults, develops quite rapidly and metastasizes early. It has no respect for any tissue of the body, and travels by the lymphatic route, the blood stream, and by invasion of the surrounding tissues. Sarcoma of the breast is usually of the spindle cell variety. Treatment consists in early surgical removal of the breast.

In reviewing the literature on the subject of breast tumors, the writer is impressed with the thought that a large percentage of the so-called benign tumors are subject to degenerative change, which may be followed later by a malignancy, and, therefore, should be looked upon as a potential menace. At this time a very intensive campaign is being waged in this country for the prevention and eradication of cancer, the success of which will be in a direct ratio to our ability to impress upon the public the great necessity of having a complete physical examination at least once a year, especially in those individuals over the age of twenty-five years. Cancer is the greatest menace the human race has ever known. There is no race, nationality or type of individual immune from the inroad of the disease; and there is no region, continent or climate where the human race can seek freedom from this malady. It is a fair presumption that the future development in the treatment of breast tumors will not be along the line of improved operative technic, but rather in more careful diagnostic methods, in the estimation of operative risks, and the exercise of judgment in regard to the type and extent of operative procedures indicated in the individual case. Surgery of the breast has been extended and improved to such an extent that only minor developments along this line can be anticipated. In the treat-

ment of malignant tumors of the breast we believe that deep therapy is a very valuable aid, and we feel that the surgeon will be conserving the best interest of his patient by enlisting the aid of a competent radiologist. Deep therapy is not a cure for cancer, but in many cases when properly applied it exerts a marked influence in maintaining a localization of the disease by producing a fibrosis and occlusion of blood vessels and lymphatics.

In conclusion we wish to stress the importance of first, giving more time to careful examination and diagnosis of breast tumors; second, educating the public to the necessity of more frequent examination and prompt reporting on any irregularities in the breast; third, looking upon all tumors as potential menaces until they are proved otherwise; and fourth, performing early radical surgical removal of carcinoma, and using deep therapy as may be determined by the radiologist.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

CARCINOMA OF THE MALE BREAST*

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During the course of a recent survey of cases of breast cancer treated at the University Hospitals during the past ten years, six cases were found involving the male breast. This is approximately 1.27 per cent of all the breast cancers admitted to this clinic during that period. This figure corresponds closely with those reported for the incidence of mammary carcinoma in the male. (Pack and Le Fevre, 1.24; Deaver and McFarland, 1.5; Roger Williams, 1.0; Coventry and Moe, 1.07; Klingenstein, 1.8; Trout, 1.66; McClure, 0.67; Jarvis, 0.6 plus; Lewis and Rienhoff, 0.9; and Lee, 4.0 per cent) The United States Census Report of 1900 gives 0.7 per cent as the incidence of cancer of the breast in males as compared to 15.7 per cent in females.

Practically all authors have emphasized that

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breast cancer in the male carries a much gloomier prognosis than the same disease in the female, but there is no general agreement as to why this is the case. It has been stated by some that the growth takes a more malignant form in males⁵. It has also been stated that metastases occur earlier than in the female^{6 and 8}. The majority of writers, however, feel that the poor results are due to delay in recognition of the condition, resulting in a far advanced state of dissemination at the time the patient first comes to the surgeon. Hamilton Bailey¹ reports that of fourteen males admitted to the London Hospital for carcinoma of the breast, more than one third were totally inoperable. Schreiner⁹, in a report of fifteen cases, states that five of them, or one third, had widespread metastases at the time of admission. Four had mediastinal involvement and four showed gross ulceration of the skin. With few exceptions the patients in his series applied for treatment late in the course of the disease. Gilbert⁴, in a review of forty-seven cases, found the inoperability rate to be 61 per cent. Wainwright¹¹, in an analysis of 343 cases, found that the average duration of time which elapsed before a doctor was consulted was 2.4 years. Judd and Morse⁵, found the average duration of symptoms before admission to the hospital to be 31.2 months.

When we consider the small size of the male breast it is hard to understand why the recognition of a mass in this region should be so difficult. The natural conclusion is that the fault is not only with the patient who delays in seeking medical attention, but also with the medical profession in failing to realize that carcinoma does occur in the male breast in a small but definite percentage of cases. On the face of it, it would seem that the prognosis in the male should be actually better than in the female, providing it once becomes instilled in the medical profession that such a lesion does exist.

The age incidence in males is said to be slightly higher than in females, averaging between fifty and sixty years of age. Lunn⁷ reports a case in a man ninety-one years of age. However, Bryan³ has reported a case in a fifteen year old boy, and Blodgett² has reported one in a boy only twelve years of age. The ages of the six patients seen at this institution were forty, fifty-one, sixty-three, seventy-five, seventy-eight and eighty-four respectively, with an average age of sixty-five years.

Wainwright has made a very careful study of the symptomatology and feels that the symptoms differ from those in the female only in the matter of frequency and time of onset. Pain is a more common symptom in males and occurs earlier. Ulceration of the skin is more frequently seen for reasons which are obvious, and may occur early

in the course of the disease. The same is true of muscle involvement and fixation to the chest wall. In his series of cases 24 per cent had muscle involvement. Discharge from the nipple is more frequent and is more often bloody in character. Wainwright believes that a bloody discharge is more significant from a diagnostic standpoint in males than it is in females. Gilbert also emphasizes the more frequent involvement of the nipple in male patients. Twenty-nine per cent of his series had retracted nipples and eight per cent gave a history of a bloody discharge. Ulcerations were present in 29 per cent of his patients on admission. Although the axillary nodes are probably no more frequently involved in males, it is often possible to feel thickened cords of lymphatics along the axillary border of the pectoralis major muscle. Kellogg Speed¹⁰ states that direct involvement of fascia and muscle by microscopic lymphatic extension is very common.

In each of the six patients available for study from the records of this clinic the first symptom noted was a mass. Pain was a prominent symptom in two cases. In two patients the growth was located directly beneath the nipple and involved it to some extent. However, there were no patients with discharge from the nipple. Fixation to the skin was present in five of the six cases and in one patient ulceration was already present. None of the tumors was described as being fixed to the chest wall. There was involvement of the axillary lymph nodes in four cases.

Trauma, especially occupational trauma, is said to be a common precursor of carcinoma of the male breast. Bryan states that a history of trauma can be elicited in 50 per cent of the male patients as compared with only 13 per cent of the female patients. Gilbert obtained a history of trauma in 29 per cent of his cases. Of the six patients in our series only one reported trauma immediately preceding the appearance of the mass; two others gave a history of trauma many years before and, therefore, it is of doubtful significance.

The duration of symptoms before admission to the hospital ranged from ten days to twelve years, the average duration being slightly over three years. Unfortunately, the records were not complete in regard to the length of time the patient had had symptoms before consulting his local physician, and this factor could therefore not be analyzed.

The report of the pathologist in each of the six cases was adenocarcinoma. Histologic grading was not carried out, but generally speaking, the microscopic appearance was that of a rather slowly growing neoplasm. Wainwright states that the scirrhous, medullary and squamous types are most

common in males. Gilbert found carcinoma simplex to be far in the lead and his grading showed percentages which compared well with the figures found in female mammary carcinoma.

In regard to treatment, there appears to be unity of opinion that carcinoma of the male breast should be treated in the manner accepted for the female; namely, surgical amputation of the breast together with resection of the pectoral muscles and axillary lymph nodes and the complete dissection we have learned to describe by the term "radical mastectomy". Although irradiation may be a useful adjunct it does not replace radical surgery as the treatment of choice. Of the six patients in this series, five were treated by radical operation and one, a man eighty-four years of age, by simple mastectomy. Two patients were given preoperative irradiation; three received postoperative irradiation. A follow-up report was obtained on each of these six patients and is included in the case abstracts below.

Case 1. F. G., a white male, sixty-three years of age, entered the hospital with a pear-sized mass of one year's duration in the breast. It was fixed to the skin and firm nodes were palpable in the axilla. The patient complained of some pain and tenderness over the mass. Radical mastectomy was carried out and the resulting defect was so extensive that primary Thiersch graft was necessary. The postoperative course was uneventful except for a slough of a few of the grafts. He was discharged from the hospital on the twenty-sixth postoperative day following a short course of irradiation therapy. Follow-up revealed that this patient died fourteen months after the operation with signs of a recurrence of the neoplasm in the scar and metastases to the lungs.

Case 2. W. F., a white male, eighty-four years of age, entered the hospital complaining of a mass the size of a hen's egg located directly beneath the nipple. The mass had first been noted a year previously and had recently become painful. It was fixed to the skin and a small ulcer was present. In spite of the fact that axillary nodes were present it was felt that the patient's age and general condition did not warrant more than a simple mastectomy. The wound healed without complications and he was discharged on his nineteenth postoperative day. Follow-up revealed that this patient died approximately two and one-quarter years later in a county institution. Although no autopsy was performed, he apparently died of causes not related to the carcinoma, and the death certificate bears the diagnosis of "myocarditis".

Case 3. C. T., a white male, fifty-one years

of age, entered the hospital with an orange-sized mass, which had been noted only ten days prior to admission, in the upper lateral quadrant of the breast. It was causing no symptoms and was not attached to either skin or chest wall. Radical mastectomy was performed and he was discharged on his twentieth postoperative day. He returned on two occasions for irradiation therapy. A follow-up of this patient showed that he died seventeen months following the operation, death being ascribed to metastases and terminal uremia. There was no autopsy.

Case 4. J. B., a white male, seventy-eight years of age, stated that twelve years previously he received a blow to the breast followed by a sore which failed to heal. Three years before admission he had undergone a simple mastectomy at another institution and at that time a mass the size of a baby's head was removed. At the time of admission to this hospital there was a large recurrence threatening to ulcerate and definitely fixed to the skin of the axillary region. The radical procedure was carried out but the patient succumbed two days later with pneumonia. Autopsy revealed bronchopneumonia as the cause of death and as an interesting incidental finding there was a second primary carcinoma located in the stomach.

Case 5. C. M., a white male, seventy-five years of age, entered with a mass in the upper lateral quadrant of the breast of three years' duration. The mass measured four centimeters in diameter, was fixed to the overlying skin and the axillary nodes were definitely involved. He was given a course of irradiation therapy and two months later a radical mastectomy was performed. He developed a severe wound infection with sloughing of the skin flaps, cellulitis of the chest wall and septicemia. His course was stormy and he died on his twenty-sixth postoperative day with a terminal uremia. Autopsy confirmed the above diagnoses.

Case 6. L. H., a white male, forty years of age, entered the hospital with a mass located directly beneath the nipple and present for two years. It had recently become painful. He received preoperative irradiation followed in three months by radical mastectomy. He, too, developed a severe wound infection with cellulitis of the skin flaps, but this cleared up and he was discharged on his twenty-fourth postoperative day. He returned nine months later at which time a recurrence in the chest wall was noted and more irradiation given. He is still living but only fifteen months have elapsed since operation.

The above cases illustrate the discouraging re-

sults which have been our experience in the treatment of carcinoma of the male breast. Of the six cases, only four survived the operation. Of these four survivals only one is living at the present writing and he has a local recurrence. The longest survival period was two and one-quarter years and this patient may have died of other causes not related to his carcinoma. The other two patients died fourteen and seventeen months, respectively, following operation.

Fortunately, there are other and more favorable reports than ours. Gilbert, in a series of forty-seven cases, reports five year survivals in five patients, but states that two of them have local recurrences. Lee reports five-year survivals in two of his series of nine cases. Judd and Morse report seventeen cases treated by radical operation with an operative mortality of 5.8 per cent and an average postoperative duration of life of twenty-two months. Wainwright, in reporting 163 collected cases, the largest series available, gives the average length of life after operation as 2.7 years. There were five-year survivals in 19 per cent, the longest survival being eighteen years and five months. He found that those with muscle involvement lived as long post-operatively as those without muscle involvement. However, in those with ulceration the life span was less than half as long as those without ulceration. The absence of axillary metastases doubled the life span.

In conclusion it should be emphasized again that the factor of delay in recognition is probably in a large part responsible for the unfavorable results obtained in carcinoma of the male breast. Although this delay is often the fault of the patient, the medical profession must shoulder its share of the responsibility. Examination of the breasts should be included as a definite step in the physical examination of all male patients and the finding of any tumor mass should call for immediate surgical investigation. An alertness on the part of the medical profession in regard to tumors of the male breast and the institution of prompt surgical treatment will go far toward improving the results.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

DIAGNOSIS OF DISSECTING ANEURYSM OF THE AORTA

WITH REPORT OF A CASE

D. W. LEIK, M.D., Dubuque

The pathologic concept of dissecting aneurysm of the aorta is not new. It was described in the autopsy of George II of England in 1761. Laënnec named it in 1819. Its frequency in large series of autopsies has been reported as varying from one in 300 to one in 2,500 cases.¹ However, clinically it has been considered a rare entity and medical students usually learn of it only in their preclinical studies. Recently interest has been mounting, and there are now records of about twenty cases which have been diagnosed before death.² and ³ This report adds another ante mortem diagnosis to this small list.

Dissecting aneurysm is really a two-stage rupture of the aorta. Hypertension with or without severe exertion causes the first rupture in an aortic media weakened by arteriosclerosis, inflammation or idiopathic necrosis (but not by syphilis). A column of blood dissects a false passage with the accompaniment of terrific pain. Of sudden onset this pain is frequently described as "tearing". It is usually first in the chest, front or back, and radiates to the head, arms, abdomen or thighs, depending upon the extent of involvement of the aorta and its large branches. The amount of dissection also determines the degree of circulatory interference. The intimal surfaces may be approximated to the degree of complete occlusion of the involved vessel. Paresthesias, pallor, coldness, differences in blood pressure or pulse, paresis or paralysis of an extremity or anuria may result. Shock may be severe enough to cause unconsciousness, but the blood pressure continues at a high level. Except rarely when the false aortic channel breaks into the true lumen, the second rupture is outside the aorta and suddenly causes death. Between these two ruptures is a relatively quiet period of several hours or days. Pain is less although tenderness over the aorta in the abdomen

may be marked. Fever and leukocytosis are moderate and the icterus index may be raised by absorbing blood.⁶

X-ray of the chest will be diagnostic if the diameter of the aorta is increased, as it usually is. Physical examination of the heart may be normal or it may reveal a heart enlarged from hypertension and there may be murmurs more suggestive of aortic dilatation than of well-marked valvular leakage. One would expect the electrocardiogram to be normal if there has been no pre-existing heart disease. White notes this in his series of cases;¹ but in both of the cases of Osgood, et al,⁶ the electrocardiograms suggested recent myocardial infarction although the hearts were found to be in good condition at necropsy. It is possible to theorize that during life there may have existed a functional partial occlusion of the coronary orifices by the split aortic coats. Such a functional occlusion has been caused in the iliac arteries by the apposition of the raised up intima, and embolus of the aorta has been diagnosed.⁴ In another similar case the intima was incised to restore the circulation.⁵ However attractive this theory is, one of the Massachusetts General Hospital cases⁴ showed a fairly normal electrocardiogram in spite of dissection for a distance along one of the coronary arteries. Conversely in one of Osgood's cases⁶ with the abnormal electrocardiogram the aortic dissection began only at the attachment of the ductus arteriosus and was not present near the coronary orifices. It would seem that dissecting aneurysm like pericarditis may produce an electrocardiogram resembling the one once thought pathognomonic of myocardial infarction, and that the mechanism is not clear.

Sudden blockage of the circulation of the heart, extremities, brains, and lungs can conceivably cause confusion. Coronary occlusion is most important in the differential diagnosis since the age, hypertension, severity of pain, and initial prostration are similar. However, the location of the pain in coronary occlusion is presternal or precordial with radiation to the jaw, left arm, or upper abdomen. In dissecting aneurysm, there is no typical radiation except that the back and lower body are frequently involved. Initial prostration is likely to be greater with aneurysm, and this in spite of a high blood pressure which is not usually true of coronary disease. Differences in circulation, x-ray visualization of the aorta, and increased icterus index are confirmatory. The electrocardiogram may be misleading except that a negative one favors aneurysm.^{7 and 8} The diagnosis is important, for survival from occlusion is common, but from dissecting aneur-

ysm very rare. Because dissecting aneurysm frequently extends to the bifurcation of the aorta or farther, embolus of the iliac arteries is a common misconception. A careful history would set an examiner on the right track. Pulmonary artery embolus has only pain in the chest in common with dissecting aneurysm. It is not clear whether or not sudden death or sudden unconsciousness followed soon by death, is due to dissecting aneurysm or the usually suspected "cerebral accident."

CASE REPORT

W. S., a white male, fifty years of age, a business man, had been well with the exception of acute pansinusitis one year previous to the present illness. It is interesting to note from the family history that his father dropped dead at forty-four years of age.

On May 18, 1937, the patient was feeling well, had eaten his lunch, and returned to his office



Fig. 1. X-ray appearance of the chest with patient in upright position.

when he suddenly experienced an excruciatingly sharp pain over the front of the chest to the left of the sternum. This pain radiated to his jaw and down the left arm. He felt as though he was being "strangled or having his head cut off". He vomited with some relief and noticed that his left arm was weak. He thought he "had had a stroke". The pain subsided to a precordial ache and he drove his car home with his right hand. There his wife noticed that his left hand and forearm were cold and white. About two hours later he

was seen by Dr. A. B. Nesler who described a heavily built, slightly obese man, complaining of pain in the epigastrium and precordia. His skin was cold and clammy, and he was restless. It was difficult to determine the size of the heart because of the thickness of the chest wall. The tones were of a fair quality, regular and fast. Over the lower part of the sternum there was a diastolic murmur. Blood pressure in the left arm was 180/100. Pulses in the two wrists were equal. The skin color and temperatures were the same in both arms and he was able to use his left arm. Morphine was given with fair relief from pain.

About eight hours after the onset of pain the patient was unable to urinate in bed and walked to the bathroom. On returning to bed he experienced a recurrence of the same severe pain, but this time it was located in the upper abdomen and he noticed numbness of the right foot for a few minutes. Relief from this attack was secured with morphine and amyl nitrite, and he was brought to the hospital. There the blood pressure was 144/70 in the right arm and 110/90 in the left arm. The skin was uniformly warm. During the next six days he had varying amounts of mid-abdominal pain and distention. Sometimes he had difficulty of urination that necessitated catheterization. Deep palpation in the abdomen elicited tenderness in the mid-line but no mass. There was never any inequality in the pulses, skin temperatures or tendon reflexes of the two sides. Heart tones remained of good quality and regular, the rate varying between 90 and 120 beats per minute. The diastolic murmur over the lower sternum continued and was perhaps a little louder than when first heard. There were no other signs of aortic insufficiency. The lungs remained clear throughout the illness. Body temperature was remittent and occasionally intermittent, the upper limit being 100 to 101 degrees, taken by mouth. Respirations stayed around 20.

The white blood cells were reported as being 18,300 on admission, the red blood cells 4,650,000, and hemoglobin 92 per cent normal by the Dare method. The blood Wassermann test was negative. The urine contained 30 milligrams per cent albumin and its sediment showed occasional red blood cells per high power field. An electrocardiogram taken five hours after the onset of pain was normal except for slight left axis deviation and low T waves in the first three leads. A second record twenty-four hours later closely resembled the first. An x-ray of the chest was reported as showing "an enormous increase in the size of the aorta, the enlargement being mostly in the descending portion and arch. The enlargement is

diffuse with no local place of dilatation and the barium filled esophagus does not show any displacement. The heart is moderately enlarged chiefly in the left ventricle. Re-examination after several days shows the same findings except that the aorta shadow has increased in size." (Fig. 1) On May 25, the seventh day of his illness, the patient suddenly expired.

Necropsy was performed by Dr. F. P. McNamara. The peritoneal and pleural cavities were free of fluid. The pericardial sac was distended with 400 cubic centimeters of fluid and clotted blood. The heart was normal except for generalized hypertrophy. It weighed 490 grams. The aorta was remarkable. It appeared greatly dilated throughout its entire length. Incision into it revealed that there had been a partial separation of the wall so that outside of the true lumen a false channel existed, from the aortic ring down into the iliac arteries (Fig. 2). The dissection was



Fig. 2. Heart and aorta opened with a sagittal incision. The insert is a superior view of the innominate, subclavian and internal carotid arteries. It shows the wide separation of the intima and media by the clotted blood and the marked decrease in the caliber of the vessels.

continued for a way into the great neck vessels. The cavity was filled with partially clotted blood. About five centimeters above the aortic ring a slit, one centimeter long, connected the true and false cavities. The intima of the aorta showed arteriosclerosis but no evidence of syphilis. The other organs were not remarkable except for several recent infarcts in both kidneys. These varied from one-half to two centimeters in diameter.

Microscopic sections of the aorta showed beginning organization and some acute inflammatory exudate involving the coats. The line of dissection appeared to be through the media.

DISCUSSION

The final clinical diagnosis of dissecting aneurysm of the aorta was made three days after the beginning of the patient's illness and was suspected on the second day. It was not difficult owing to the classical aspects. A familial tendency to the early onset of vascular degeneration could be suspected by the sudden death of the patient's father in middle life. The pain was typical in its sudden onset and terrific intensity. Most helpful was its change of location down the body from the jaw to the abdomen. Tenderness in the abdomen was confirmatory. Circulatory interference was evident by the cold left hand and suspected by the numb right foot. Also for a time the blood pressures of the two sides differed. The heart remained normal according to the electrocardiogram while a diastolic murmur suggested aortic dilatation. Mild fever and leukocytosis were present. The x-ray showed enormous aortic enlargement. With these facts in this order the correct diagnosis is easy providing one is aware of the existence of this supposedly rare condition. In a similar situation Dr. Soma Weiss⁹ said, "You have invited me to discuss the differential diagnosis . . . and I cannot offer one. There is but one condition . . . which is characterized by all manifestations presented by this patient, and that is dissecting aneurysm of the aorta."

SUMMARY

Although dissecting aneurysm of the aorta is not rare, only about twenty cases have been diagnosed before death. In chest pain a consideration of its possibility and a knowledge of its characteristics will raise the number of diagnoses. That this diagnosis is even easy is shown by the reported case.

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DOCTORS' HOBBY EXHIBIT AT ANNUAL MEETING IN MAY

This year the Iowa State Medical Society is sponsoring an exhibit of doctors' hobbies. Similar exhibits have been very successful in other cities, especially in Detroit, Milwaukee and Los Angeles. A special room is being set aside at the Annual Meeting of the State Society to be held in Des Moines in May.

Medical men indulge in a great many indoor pastimes: photography, sculpturing, painting or drawing, and the collection of books, etchings, prints or stamps. There is no entry fee, but exhibitors must pay for the transportation of their exhibits, and any unusual expense involved. Beaver board mats for mounting prints, etc., and tables will be provided.

Dr. Myers, president of the Iowa State Medical Society, is taking an especial interest in this phase of the meeting, and we hope to have an enthusiastic response from our members. We believe that Iowa doctors have just as many interesting hobbies as those in other states. Start getting your collection ready for exhibition. Write to Dr. J. M. Bruner, in care of the Iowa State Medical Society, 505 Bankers Trust Building, Des Moines, Iowa, stating the character of your exhibit. As available space is somewhat limited this year this should be done at once.

MEDICAL PRACTICE DISCUSSED ON THE AIR

Recently, on the Town Hall of the Air radio program, three methods of providing medical care were discussed. We do not know who picked the speakers, but Dr. Christie in presenting the ideals of the private practice of medicine did a fine piece of work. He spoke clearly, stressed his points in a dignified manner, and presented the profession in the best possible light. His opponents, advocating cooperative medicine and voluntary insurance waxed facetious and sarcastic, and suffered somewhat in comparison.

The questions asked by the audience, evidenced a preponderance of doubt as to the desirability of either insurance or cooperative medicine. Intelligent inquiries showed the audience grasped the fact that both plans were available only to members of society who were receiving an adequate income for their work. Neither plan made any provision for the indigent or the low income group, except by some indefinite federal subsidy.

If medicine can have more men with the ability of Dr. Christie to present its merits in a dignified manner, without ridicule and sarcasm as weapons, it will fare much better before the public. The public is intensely interested in its health. It will listen to any scheme presented in a plausible manner by a convincing speaker. We must study these plans, evaluate them for their advantages and disadvantages, and forgetting ourselves, present these facts to the public. Thus we can retain the privilege of solving those problems which belong to the medical profession, and only the medical profession.

STATE DEPARTMENT OF HEALTH

Valer L. Living

Pneumonia Typing Stations in Iowa

The subject of pneumonia typing stations was presented in an article entitled "Pneumonia Control Measures," which appeared in the December, 1937, number of the JOURNAL, page 639. Four letters relative to typing of pneumonia have been directed by the State Health Commissioner to hospitals and private and public health laboratories

throughout the state. Diagnostic antipneumococcal serum for Types I to VIII inclusive has been supplied, without cost, to the following hospitals and laboratories, where facilities are at hand for the typing of pneumococci according to the Neufeld method:

County.	City or Town.	Name of Hospital or Laboratory.	Physician or Person in Charge.
Allamakee.....	Waukon.....	Rominger & Jeffries.....	Roy R. Jeffries, M.D.
Appanoose.....	Centerville.....	St. Joseph's Mercy.....	Chas. F. Brummitt, M.D.
Appanoose.....	Centerville.....	Office, Health District No. 2.....	Frank J. Condon, M.D., Director
Benton.....	Vinton.....	Virginia Gay.....	T. L. Chadbourne, M.D.
Black Hawk.....	Waterloo.....	Clinical Laboratories.....	J. L. Kestel, M.D.
Black Hawk.....	Waterloo.....	Presbyterian.....	W. H. Acker, M.D.
Black Hawk.....	Waterloo.....	St. Francis.....	J. L. Kestel, M.D.; Sister M. Valeria (Aubertin), R.N., M.T.
Boone.....	Boone.....	Boone County.....	Bessie M. Bryan
Bremer.....	Waverly.....	St. Joseph's Mercy.....	Herbert W. Rathe, M.D.; Pauline Jack, B.S.
Buchanan.....	Independence.....	Peoples'.....	C. W. Tidball, M.D.; N. L. Hersey, M.D.; F. F. Agnew, M.D.; A. G. Shellito, M.D.
Calhoun.....	Lake City.....	McVey Memorial.....	F. W. Hobart, M.D.
Carroll.....	Carroll.....	St. Anthony.....	W. M. Shirley, M.D.
Cass.....	Atlantic.....	Atlantic Incorporated.....	W. S. Greenleaf, M.D.; Lillian C. Zendell, Superintendent and Laboratory Technician
Cerro Gordo.....	Mason City.....	Park Hospital.....	L. R. Woodward, M.D.; Beatrice Benish, A.B.
Cerro Gordo.....	Mason City.....	St. Joseph's Mercy.....	H. W. Morgan, M.D.
Cherokee.....	Cherokee.....	Cherokee State.....	Chas. F. Oberman, M.D.; Given Jacobsen
Cherokee.....	Cherokee.....	Sioux Valley.....	Elizabeth F. Beisecker
Chickasaw.....	New Hampton.....	St. Joseph's.....	H. Haumeder, M.D.
Clarke.....	Osceola.....	Harken.....	Abner Buresh, M.D.
Clarke.....	Osceola.....	Osceola.....	H. E. Stroy, M.D.; L. Wells, R.N.
Clayton.....	McGregor.....	McGregor.....	E. C. Meggers, M.D.
Clinton.....	Clinton.....	Jane Lamb Memorial.....	E. H. Boyer, M.D.
Clinton.....	Clinton.....	St. Joseph's Mercy.....	Sister M. Gabriella, M.T.
Crawford.....	Denison.....	Denison.....	P. J. Brannon, M.D.
Decatur.....	Woodward.....	School for Feeble Minded.....	Chas. E. Irwin, M.D., Superintendent
Decatur.....	Leon.....	Decatur County.....	M. W. Rogers, M.D.; Eva Green
Des Moines.....	Burlington.....	Burlington Protestant.....	E. J. Wehman, M.D.
Des Moines.....	Burlington.....	Mercy.....	Geo. B. Crow, M.D.
Des Moines.....	Burlington.....	Security Laboratories.....	J. B. Wahl; M. K. Widdekind, B.S.
Des Moines.....	Burlington.....	St. Francis.....	E. J. Voigt, M.D.
Des Moines.....	Burlington.....	Des Moines County Health Unit.....	E. C. Sage, M.D., C.P.H., Director
Dubuque.....	Dubuque.....	Finley.....	F. P. McNamara, M.D.
Emmet.....	Estherville.....	Coleman.....	J. M. Wolden, Superintendent
Fayette.....	West Union.....	West Union Community.....	Marguerite Will, Acting Supt.; L. Ford, R.N.
Franklin.....	Hampton.....	Lutheran.....	W. L. Randall, M.D.; Miss P. A. Babcock
Greene.....	Jefferson.....	Greene County.....	Geo. W. Franklin, M.D.
Hardin.....	Eldora.....	Eldora.....	D. M. Nyquist, M.D.
Henry.....	Mt. Pleasant.....	Mt. Pleasant State.....	L. P. Ristine, M.D., Superintendent; Carol Martin
Jackson.....	Maquoketa.....	City Memorial.....	Arthur Graff
Jasper.....	Newton.....	Mary Frances Skiff Memorial.....	Julius S. Weingart, M.D.
Jefferson.....	Fairfield.....	Jefferson County.....	Cora Marie Murray, Supt.; Phyllis Caver-Baker
Johnson.....	Iowa City.....	Mercy Hospital.....	Sister Mary Bernard
Johnson.....	Iowa City.....	State Hygienic Laboratory.....	M. E. Barnes, M.D., Dr.P.H., Director; Irving H. Borts, M.D.
Johnson.....	Iowa City.....	University Hospitals.....	R. E. Neff, Administrator; Eloise Larson, M.D.
Jones.....	Monticello.....	John McDonald.....	Ruth E. Johnson, R.N., Superintendent
Lee.....	Keokuk.....	St. Joseph's.....	Sister M. Evangelista, M.T.
Lee.....	Fort Madison.....	Iowa State Prison Laboratory.....	R. L. Feightner, M.D.
Lee.....	Fort Madison.....	A. T. and S. F.....	E. L. Durrill, M.D.
Lee.....	Fort Madison.....	Sacred Heart.....	Staff
Linn.....	Cedar Rapids.....	Mercy.....	F. W. Muslow, M.D.
Linn.....	Cedar Rapids.....	St. Luke's Methodist.....	F. W. Muslow, M.D.
Linn.....	Cedar Rapids.....	Security Laboratories.....	M. A. Chehak, Ph.C.
Lucas.....	Chariton.....	Yocom.....	A. L. Yocom, M.D.
Madison.....	Winterset.....	Winterset.....	Arnold Nelson, M.D.; Ruth E. Jennings, R.N.
Marshall.....	Marshalltown.....	Evangelical Deaconess.....	A. Matzner
Marshall.....	Marshalltown.....	St. Thomas Mercy.....	J. J. Noonan, M.D.; Sister M. Philomena

County.	City or Town.	Name of Hospital or Laboratory.	Physician or Person in Charge.
Mills.....	Glenwood.....	Iowa Inst. for Feeble Minded Children.	Harold B. Dye, M.D.
Monroe.....	Albia.....	Miners'	H. J. Richter, M.D.
Montgomery.....	Red Oak.....	Murphy Memorial.....	H. C. Bastrom, M.D.
Muscatine.....	Muscatine.....	Bellevue.....	J. L. Klein, M.D.
Muscatine.....	Muscatine.....	Benjamin Hershey Memorial.....	L. C. Howe, M.D.; Laura Rexroth, R.N.; Ova Reg- gins, R.N.
O'Brien.....	Hartley.....	Hand.....	W. C. Hand, M.D.; L. E. Hogel, M.D.
O'Brien.....	Sheldon.....	Good Samaritan.....	Carrie Schafer
Osceola.....	Sibley.....	Osceola.....	F. P. Winkler, M.D.
Page.....	Clarinda.....	Clarinda State.....	R. D. Smith, M.D., Superintendent
Plymouth.....	LeMars.....	Office, Health District No. 1.....	R. M. Sorensen, M.D., Director
Pocahontas.....	Laurens.....	Office.....	J. H. Hovenden, M.D.
Polk.....	Des Moines.....	Broadlawn's General.....	D. W. Coughlan, M.D.; Jeanette Coffan
Polk.....	Des Moines.....	City Municipal Laboratory.....	H. E. Ransom, M.D.; Nell Fishel, B.S.
Polk.....	Des Moines.....	Glomset Laboratory.....	Anna T. A. Glomset, B.A., M.S.
Polk.....	Des Moines.....	Iowa Lutheran.....	Julius Weingart, M.D.; M. D. Vuagniaux, B.S.
Polk.....	Des Moines.....	Iowa Methodist.....	D. H. Kaump, M.D.
Polk.....	Des Moines.....	Mercy.....	Julius Weingart, M.D.
Polk.....	Des Moines.....	Office, Polk County Health Unit.....	T. E. Evers, M.D., C.P.H., Director
Polk.....	Fort Des Moines.....	Army Station.....	Capt. R. S. Leone, M.D.
Pottawattamie.....	Council Bluffs.....	Council Bluffs Clinic.....	A. A. Johnson, M.D.
Pottawattamie.....	Council Bluffs.....	Jennie Edmundson Memorial.....	Mary L. Tinley, M.D.; L. G. Howard, M.D.
Pottawattamie.....	Council Bluffs.....	Mercy.....	A. S. Rubnitz, M.D. (Omaha)
Poweshiek.....	Grinnell.....	Grinnell Community.....	S. D. Porter, M.D.
Poweshiek.....	Grinnell.....	St. Francis.....	C. W. Howell, B.S., M.D.
Sac.....	Sac City.....	Sac City.....	L. B. Amick, M.D.
Scott.....	Davenport.....	St. Joseph Mercy.....	H. A. Stribley, M.D.; Sister M. Vivian
Scott.....	Davenport.....	St. Luke's.....	F. H. Lamb, M.D.; Julia Hecklinger
Sioux.....	Orange City.....	DeBey.....	John G. DeBey, M.D.
Sioux.....	Hawarden.....	Hawarden Community.....	Orville Peterson, A.B., Superintendent
Story.....	Ames.....	College Hospital.....	J. G. Grant, M.D.; Amanda Ganschow
Story.....	Nevada.....	Iowa Sanatorium.....	A. E. Gilbert, M.D.; Herman Staff
Tama.....	Toledo.....	Sac and Fox Sanatorium.....	Ira Nelson, M.D., Supt.; K. Y. Yazerian, B.S.
Tama.....	Toledo.....	State Juvenile Home.....	Knight E. Fee, M.D.
Wapello.....	Ottumwa.....	Ottumwa.....	Lillian M. Corey, Superintendent
Wapello.....	Ottumwa.....	St. Joseph.....	F. A. Hecker, M. D.
Washington.....	Washington.....	Washington County.....	C. A. Boice, M.D.; Blanche Robertson
Washington.....	Washington.....	Office, Washington County Health Unit.....	E. L. Walsh, M.D., Director
Webster.....	Fort Dodge.....	Lutheran.....	A. Langehang, Supt.; Herman N. Dulaney, B.A.
Webster.....	Fort Dodge.....	St. Joseph's Mercy.....	A. S. McMillan, M.D.; Beatrice Casey, B.S.
Winnebago.....	Forest City.....	Irish.....	C. W. Thomas, M.D.
Winneshiek.....	Decorah.....	Decorah.....	Lester E. Larson, M.D.
Woodbury.....	Sioux City.....	Lutheran.....	A. C. Starry, M.D.
Woodbury.....	Sioux City.....	Methodist.....	A. C. Starry, M.D.; G. T. Notson, Superintendent
Woodbury.....	Sioux City.....	St. Joseph.....	A. C. Starry, M.D.
Woodbury.....	Sioux City.....	St. Vincent's.....	H. E. Peebles, M.S.

Diagnostic serum for type determination of pneumococci by the Neufeld method will be forwarded without charge to physicians with office laboratories who desire this material for diagnosis.

Remarkable results following treatment of certain types of pneumonia with antipneumococcic serum are reported in a special article entitled "Postgraduate Institute on Pneumonia," printed in the *Journal* of the American Medical Association for December 18, 1937, pages 2056 to 2063.

Limited funds make it possible at this time for the Iowa State Department of Health to supply antipneumococcic serum, without cost, for the treatment of the underprivileged or indigent patient whose type of pneumonia has been carefully determined by the Neufeld technic. The Department will distribute antipneumococcic serum for the treatment of pneumonia caused by Types I, II, V, VII or VIII. The physician reporting a case of pneumonia which affects an indigent or underprivileged person and desiring therapeutic serum, may obtain this through communication by telephone with the Iowa State Department of Health. The telephone number from 8:00 a. m. to 5:00 p. m., is 4-9111, Extension 104 or 137. After 5:00 p. m. on week days, Saturday afternoons or Sundays, requests for serum will be answered through Des Moines telephone numbers, 7-1417 or 6-1696.

COMMUNICABLE DISEASE REVIEW OF 1937

The following diagrams present in graphic form the number of cases of certain communicable diseases reported by months during 1937, as compared with the expected number, the latter representing an average of monthly reports based on the experience of past years.

SYPHILIS IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a three-year average for the period 1934-1936.

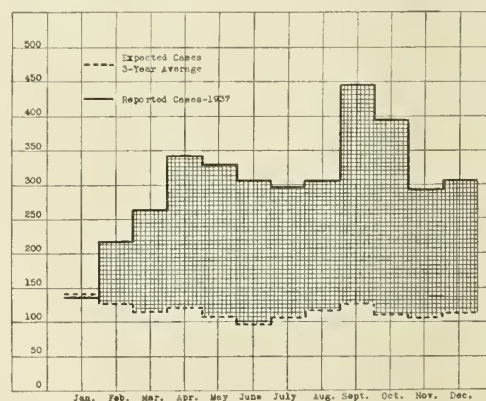


Fig. 1.

Cases of syphilis reported by months are represented graphically in Figure 1. The shaded area should be regarded, not as representing an increased prevalence but rather a more complete

reporting of syphilis during the past year. Reported cases in 1937 totaled 3,627, an increase of 280 per cent over the 1,295 reported in 1936. Death certificates record syphilis as having caused 119 deaths during the first ten months of 1937.

GONORRHEA IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a three-year average for the period 1934-1936.

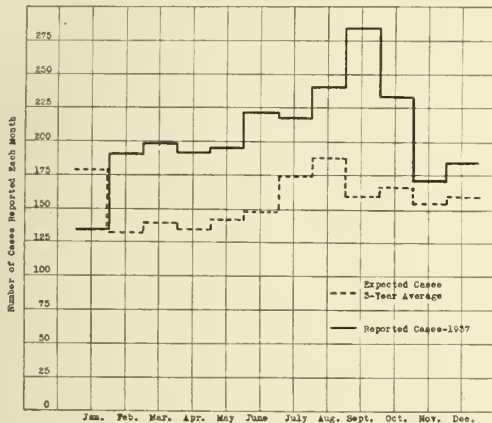


Fig. 2

The reporting of gonorrhea, Figure 2, showed definite improvement over the average for the three year period, 1934 to 1936.

DIPHTHERIA IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

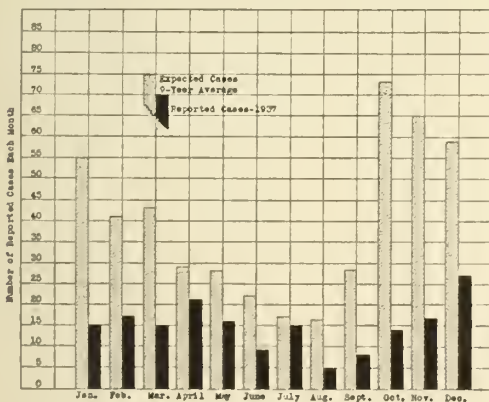


Fig. 3

As shown in the bar graph, Figure 3, the reported incidence of diphtheria was far below that of the expected number, based on the experience of the nine year period 1928 to 1936. Reported cases in 1937 totaled 179; seven deaths were recorded for the first ten months.

MEASLES IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

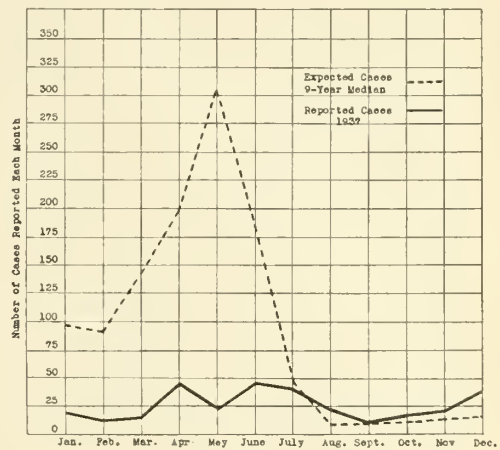


Fig. 4

The year 1937 represented another off-year for measles in Iowa (Figure 4). However, more than the expected number of cases were reported during October, November and December with the probability of more widespread prevalence in 1938. Reported cases totaled 277, with two recorded deaths for the first ten months.

MENINGOCOCCIC MENINGITIS IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

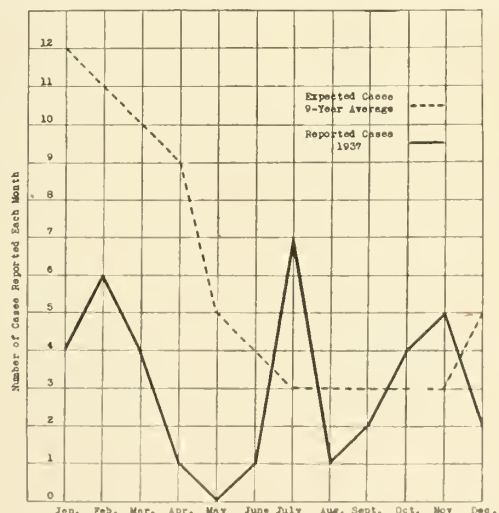


Fig. 5

The line graph, Figure 5, represents the reported incidence of meningococcic meningitis for 1937. Reported cases numbered 37, with 24 deaths (first ten months).

POLIOMYELITIS IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

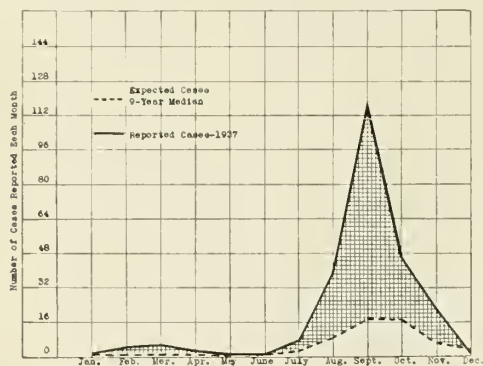


Fig. 6

Undue prevalence of poliomyelitis during the fall months of 1937 is evident in the shaded peak shown in Figure 6. Reported cases totaled 241; deaths to November 1 numbered 37.

SCARLET FEVER IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

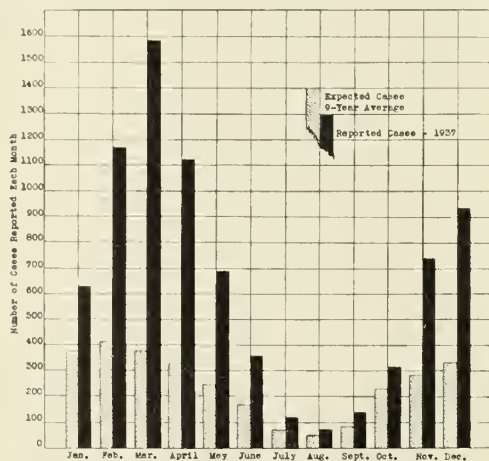


Fig. 7

Unusual prevalence of scarlet fever continued throughout the past year (Figure 7), with 7,860 reported cases and 94 deaths recorded for the first ten months.

Marked increase in reported prevalence of smallpox occurred in 1937, as represented by the

SMALLPOX IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a three-year average for the period 1934-1936.

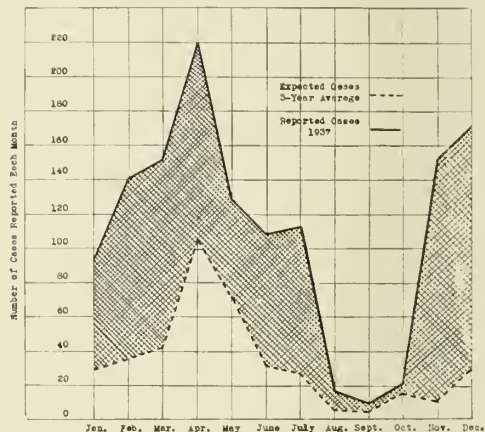


Fig. 8

shaded area in Figure 8; 1,316 cases of smallpox were reported for the year with two fatalities to November 1.

TYPHOID FEVER IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

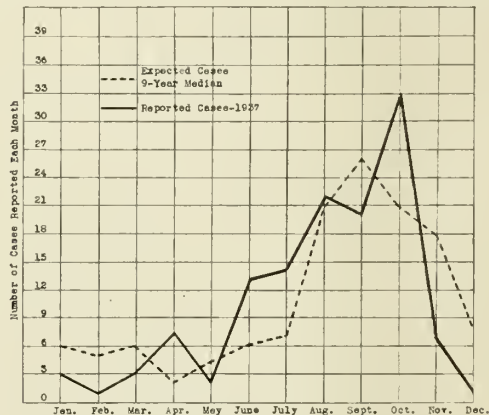


Fig. 9

The line graph, Figure 9, shows the reported and expected number of cases of typhoid fever during the months of 1937. Reported cases totaled 126; recorded deaths in the first ten months were 16.

The past year was a stormy period for whooping cough (Figure 10); 1,698 cases were reported

(Continued on page 34)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII JANUARY, 1938 No. 1

AS ANOTHER YEAR BEGINS

At the beginning of a new year it is a time-honored and altogether fitting custom for the JOURNAL to cast a fleeting glance backward over the twelve preceding months, and to look forward with an expression of its aspirations for the year ahead.

It is the sincere hope of your editor that the several issues of the JOURNAL for 1937 have met with your approval, that in its pages you have found information which has been of real service to you, both in the scientific and economic phases of your work; and above all, it is our hope, yes, even our prayer, that among many of you the JOURNAL has been accorded that enviable distinction of being classed with your "must" reading. The number and variety of excellently prepared scientific articles which have been available for publication during the past year has been particularly gratifying to us. While many of these were presented as addresses at the annual session, nevertheless a considerable portion of others have been received as original contributions from physicians throughout the state who have wished to record their medical experiences for the benefit of their fellow practitioners. At no time has the JOURNAL found itself in the embarrassing predicament of going to press with its scientific section curtailed due to lack of material. On the contrary, the number of articles submitted has made it possible for your Publication Committee to exercise a considerable degree of selection. Such a situation is highly to be desired, since it is in the best interests of the readers, and the one sure means for improving the quality of our publication.

Requests for exchange or complimentary copies of the JOURNAL are being constantly received from

many parts of this country and a few from abroad. For this reason, if for no other, it is our intention to adhere strictly to our policy of accepting for publication only those manuscripts which are well prepared, and which contain essential information readily obtainable by the reader. To those prospective authors not accustomed to the art of writing, but who nevertheless have "something worth saying," we would make the suggestion that they enlist the services of someone skilled in this field, for instance, the local high school English teacher. In general those articles are most valuable which are short and concise, and which attempt to stress as few points as are necessary to a clear understanding of the subject being presented. The appearance of an author's work in print should be a source of pride to him and reflect credit upon the publication carrying it. This goal cannot be accomplished when poorly arranged articles are published. It is with the thought uppermost in mind of maintaining and improving the standard of your JOURNAL that these references to the preparation of scientific articles are made, and it is hoped that authors, both past and future, will accept the suggestions in the spirit in which they are offered.

In the editorial section of the JOURNAL a conscientious effort has been made during the past year to present as many as possible of the current sociologic and economic problems now facing the medical profession. We have been urged to this action because we have felt keenly that at no time in the history of medicine has it been so essential for medical men to keep themselves informed of the various movements which threaten to disturb the stability of medical practice in America. It is a source of great satisfaction to us that the Medical Economics Committee has assigned one of its members (Ernest E. Shaw, M.D., of Indianola) to the task of preparing monthly articles for publication in the JOURNAL. This provision for keeping the entire membership in close touch with the workings of this important committee will be a valuable service. It will be our endeavor to keep the membership equally informed of the activities of the various other committees.

A new feature, which we believe possesses merit, is exemplified by the series of articles on heart disease prepared by Daniel J. Glomset, M.D. At their conclusion the physician should have a ready reference to any phase of this important subject. We hope to be able to follow this plan with other topics in the near future, with the objective in mind of providing up-to-date textbook type of references on a variety of subjects.

These are some of the thoughts which occur to

us as we look back over the year and reflect upon how your JOURNAL can increase its usefulness to you in the months ahead. We welcome your suggestions and beseech your continued cooperation. The yardstick of measuring the value of the JOURNAL to its readers is the extent to which it is utilized and utilizable. This implies a joint effort, and perhaps no better resolution could be made as we begin the new year than this; that each of us resolve to extract the last full measurement of value from our JOURNAL which it is capable of giving. And now, may we avail ourselves of this opportunity to extend to you our most sincere wishes for a very happy New Year.

VITAMIN B₁ DEFICIENCY

One of the most fascinating and illuminating demonstrations of modern biologic research is the rôle of Vitamin B₁ in carbohydrate metabolism. The evidence of some relationship was first indicated by Casimir Funk in 1910 when he found that polyneuritis in pigeons on a Vitamin B deficiency diet was accelerated by a diet rich in carbohydrate and also that a low carbohydrate diet delayed the onset of symptoms. It was then demonstrated by Kinnersley and Peters in 1929 that in pigeons with opisthotonos resulting from a prolonged Vitamin B₁ deficiency diet, the brains contained an excess of lactic acid as compared with normal controls. It was also found that this excess accumulation of lactic acid was present in only certain parts of the brain, so that the increase did not simply represent an elevation of the blood lactic acid.

Peters and his co-workers attributed the increase in lactic acid to impairment of the oxidation process, the metabolism of carbohydrate ceasing at this point. To confirm this hypothesis they then compared the oxygen consumption of normal and of avitaminotic brain cells respiring in vitro. It was demonstrated that avitaminotic brain tissue shows a much lower rate of respiration than does normal tissue. However, if crystalline Vitamin B₁ is added to the glucose or the lactic acid solution in which the brain is respiring, the rate of respiration of the avitaminotic brain is restored to normal. From these experiments it was concluded that Vitamin B₁ was concerned in some way with the oxidation of lactic acid. Peters and Sinclair showed that avitaminotic brain tissue when respiring in vitro resulted in the accumulation of relatively large amounts of pyruvic acid. Normal brain tissue, however, showed no such accumulation.

Pyruvic acid is a three-carbon atom acid, dif-

fering from lactic acid in that it has a carbon monoxide group instead of a carboxyl group. It was concluded as a result of these various experiments that Vitamin B₁ is concerned with the oxidative removal of pyruvic acid, and in Vitamin B₁ deficiency, oxidation of carbohydrate stops with pyruvic acid. Estimation of the pyruvic acid content of the blood of birds on a Vitamin B₁ deficiency diet revealed a large increase and the return to normal after curative doses of the vitamin had been administered. To corroborate this finding in the experimental animal, Platt and Wu found a definite increase in the blood pyruvic acid in fulminating cases of human beriberi. The clinical state of polyneuritis or of beriberi in Vitamin B₁ deficiency is not attributed to the toxic effect of an accumulation of pyruvic acid but to the fact that in a disturbance of the metabolism of glucose the function of the nerve cell is disturbed.

Paralleling the research studies numerous clinical investigations of Vitamin B₁ deficiency have been carried out. It is now believed that various clinical states may be attributed not only to a deficiency of the vitamin in the diet but also to failure of absorption even when the diet is normal. The established rôle of Vitamin B₁ is the prevention and the cure of beriberi, and the beneficial effect of increasing the appetite. Along with other vitamins it is essential for optimum growth. Enthusiastic clinical reports indicate considerable therapeutic success with Vitamin B₁ in various types of neuritis, particularly in alcoholic polyneuritis and the toxic polyneuritis of pregnancy, and in certain functional disorders of the gastrointestinal tract.

At the present time there is no reliable test of Vitamin B₁ deficiency except for the therapeutic response to the administration in suspected clinical states. However, the trend of laboratory and clinical study indicates a more thorough understanding of partial avitaminosis.

THE IMPORTANCE OF YOUR MEMBERSHIP

There has probably never been a time when membership in medical societies has not been important. Without a doubt such membership has always been worthwhile to the individual in one way and another. Possibly the motivating force in the organization of medical societies was the need for fellowship and stimulation afforded by meeting with one's colleagues. This need still exists. Medical science has advanced rapidly in the last two decades; it is continuing to advance. The individual physician would find it difficult indeed to keep pace with new developments if he

relied entirely upon himself. However, through contact with his medical societies, and through the postgraduate courses conducted by his state medical society, he is enabled to keep in touch with the times. He is kept informed of new advances in medicine, and is encouraged in his desire to render his patients that superior type of service to which they are entitled.

The importance of this phase of the physician's life cannot be over-emphasized. However, in addition to the need for education, the physician is confronted by economic problems which have multiplied greatly in the past few years. As an individual he is powerless to cope with them. He cannot even hope to be informed on all of the various projects which would affect him in his daily life; much less can he hope to judge the merits or dangers of these projects. One man's vision is not enough; the viewpoint and judgment of many persons are necessary to determine the best course to pursue. Only by calm deliberation and careful weighing of the facts can the medical profession separate the wheat from the chaff. Only by working together can the physicians of this state map out the path they would follow.

It is possible that important changes will be made in the practice of medicine in the near future. If so, it is vitally essential for the medical profession to understand and initiate the changes through its own channels, rather than to have certain plans and schemes foisted upon it. The single individual is powerless to stem the tide, but by adding his strength to that of his fellow practitioners, he becomes a source of great potential strength. The Iowa State Medical Society is not a static force; it is a dynamic one. The number of its members grows from year to year. As long as the physicians in Iowa bind themselves together, as long as they take an active part in the work of their organization, they will have the power to direct their own progress.

At this time when the call for membership dues goes forth, it is to be hoped that all physicians will see the value of active participation in their medical organizations, and will cooperate in the present as they have in the past. We must remember when we take our places beside those whose interests and principles correspond with ours, that we are helping to create a group the demands of which cannot be denied. And in proportion, when ethical practitioners fail to take advantage of this opportunity they are weakening the structure of their own association which has been formed for the express purpose of bettering the conditions and maintaining the high standards of their chosen profession.

VII. THE TREATMENT OF CARDIAC INFECTIONS*

(Continued from last month)

There has been no significant improvement in the treatment of bacterial endocarditis during the last two decades. The ulcerative type usually caused by the *Streptococcus haemolyticus* is part and parcel of a vicious form of septicemia. It is distinguished from other forms of blood poisoning by the signs and symptoms of heart involvement, the occurrence of showers of emboli, the presence of a large spleen, and the septic type of fever. If the attending physician succeeds in keeping the severely ill patient comfortable and in fairly good spirits, he is giving his charge all that medical science can at the present. Certainly it would be criminal to deny such a sufferer anything which would please him or add to his comfort.

The subacute type of endocarditis caused by the implantation of *Streptococcus viridans* on damaged valves differs from the malignant variety only in being less severe and in the fact that it may not be possible to pick up the green producing streptococcus by the usual blood culture methods for long periods at a time. Another important difference is that cures have been reported. These optimistic reports are a boon to all concerned, and it would be cruel to rob the patient, the family, and the doctor of this hope. It should be borne in mind that the *Streptococcus viridans* occurs at all times in normal mouths and that when a person is sick and blood cultures are properly made an occasional coccus may be picked up from the blood stream. All of my patients with subacute bacterial endocarditis have died, and some of them have run a malignant course. Usually, however, the patient lives long enough to give the attendant an ample opportunity for various methods of treatment. Thus everything from immunotransfusions to sulfanilamide have been tried repeatedly and failed. The only hope is that the patient's own defensive mechanism will prevail. However, it must be aided in every possible way. This is done by maintaining the patient's morale and supplying proper nutrition. If the appetite is capricious and the food does not contain enough vitamins, these are readily supplied at the present; and when iron no longer prevents the developing anemia, enough transfusions to hold the hemoglobin at a normal level must be given. A cheery sickroom, good nursing care with meticulous attention to even the trivial needs of the patient, may be the factors which turn the scales to life.

The only clinically recognizable syphilitic in-

*Editor's Note: This is the seventh article in a series of editorials prepared by Dr. Daniel J. Glomset. Earlier issues of the JOURNAL carried the first six parts.

vovement of the heart is mesaortitis at the beginning of the aorta. This leads to destruction and crippling of the aortic semilunar valves, and to the signs and symptoms of aortic insufficiency; namely, diastolic aortic murmur; low diastolic blood pressure; water hammer pulse; cardiac hypertrophy; high systolic blood pressure; and death from congestive failure. According to Willius¹ the manifestations of syphilitic heart disease appear eighteen to twenty years after the initial lesion. They should never appear in this enlightened age when effective treatment is available to rich and poor alike. Perhaps the campaign against lues which is now being waged by the United States Public Health Service will eradicate the syphilitic form of heart disease. Those who willfully neglect to undergo the proper treatment are, perhaps justly, eliminated by this form of heart lesion. If the clinician is so fortunate as to recognize the mesaortitis before much damage of the valves has occurred, the patient still has a fair chance; but when the classical symptoms with the beginning of left ventricular heart failure are present, the prognosis is very poor. One or two years at the most is all the time one can reasonably promise to a patient.

The treatment differs in no way from the treatment of tertiary syphilis anywhere in the body. The treatment of syphilis has now been systematized by the United States Public Health Service² and one can do no better than to use this outline as a basis for treatment in all forms of syphilis. Much has been written about the danger of arsphenamine in syphilis of the aorta. Large doses of arsphenamine are dangerous in any form of syphilis and one who employs such doses will sooner or later have cause to regret it; but small doses are just as efficacious in early syphilis of the heart as in any other place, and efficient treatment will prolong life providing the crippling of the valves has not progressed too far. In that event congestive failure will soon develop, and this form of failure responds poorly to treatment.

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2. Stokes, J. H., Cole, H. N., Moore, J. E., O'Leary, P. A., and Wile, U. J.: Standard treatment procedure in early syphilis: a resume of modern principles. *Ven. Dis. Inform.*, xv:149-161 (April) 1934.

SCIENTIFIC EXHIBITS

Dr. Douglas N. Gibson of Des Moines has been appointed chairman of the scientific exhibits for the annual meeting of the Iowa State Medical Society to be held next May. Dr. Gibson will be glad to have any physician or organization desiring space for a scientific exhibit write him at once, in care of the central office at 505 Bankers Trust Building, Des Moines, Iowa.

GROUP HEALTH ASSOCIATION, INCORPORATED*

On February 24, 1937, there was filed in the office of the Recorder of Deeds of the District of Columbia a document purporting to be the articles of incorporation of "Group Health Association, Incorporated." With this is begun a new experiment in so-called voluntary health insurance. Originally this association is planned to serve the employees of the Home Owners' Loan Corporation in and near Washington, D. C. However, provision is made for the extension of membership to "all employees of any branch of the United States Government Service other than officers and enlisted men of the United States Army and Navy."

In the organization section of the *Journal* of the American Medical Association for October 2, 1937, the Bureau of Legal Medicine and Legislation discusses at length the legal aspects of the association's organization. Here it is pointed out that the Group Hospital Association has been incorporated to give services for a certain sum, without at the same time qualifying as an insurance company. On several points the project appears to be organized in an illegal manner to carry out services in a manner definitely forbidden by the laws of the District of Columbia. For us the chief interest lies, not in the legality of the scheme, but in the general operation of the plan and its significance as a possible opening wedge in the formation of a general governmental voluntary insurance scheme for medical care.

The association offers a rather indefinite amount of medical, surgical and hospital care for the member and his family for a fee of \$39.60 per year for a married person with dependents, or \$26.40 per year for a married or single member without dependents. This sum is to cover "unlimited" medical services, and limited hospitalization, but further states that the Association will do so "only to the extent of its resources." The next paragraph in the by-laws limits this "unlimited service" promise by the provision that the trustees shall have the right to determine and modify the extent of the services to be furnished to members at any time they may wish, "providing written notice is sent to the members fifteen days prior to the change." Such a clause in any commercial policy would render it valueless and would doubtless cause the insurance authorities to force the withdrawal of the contract from sale. A member might pay for a year, expecting certain services when and if they were needed, and then become sick or be injured just after a ruling by the trustees had reduced their obligation under the

*Prepared by E. E. Shaw, M.D., for the Medical Economics Committee.

plan to less than half that which he had paid for. It would seem that those who join this association, and pay their assessments would look into the contract and attempt to get for themselves some definite statement of the services to be expected on the payment of that assessment.

This Group Hospital Association, Incorporated, in addition to offering the so-called "unlimited" medical service, gives twenty-one days' hospital care for any one illness or injury, the patient to be in a two-bed room. There is no limit to the number of times in a year that a member can have this hospitalization, as long as each entry is for a different disease or accident. However, service does not include the following items: dental treatment; medicines; surgical appliances, crutches, etc.; eyeglasses; hearing devices; radium or high voltage x-ray treatments; oxygen tanks, tents and materials; blood transfusions; special nursing care; any treatment or supplies ordered by a physician not in the employ of the association, or hospitalization in excess of that allowed by the association. Furthermore, the association will not treat members who suffer from industrial accidents, nor will it perform any surgery on the brain or nervous system. Venereal diseases are treated with an additional charge of fifty cents per treatment. Tuberculosis, drug addiction, alcoholism and mental diseases requiring sanitarium care are not provided for.

It is evident, therefore, that this contract accepts a large group of medical items. It is not a complete coverage, and may be limited further in any way at any time if it is found that existing funds will not cover the costs, or if the trustees deem such action advisable. The literature so far issued and the items in the newspapers use the typical catch phrases which one reads in the advertisements of the cheap accident and health policies. The unsuspecting prospective member will see the offer of unlimited medical and surgical service; but he will fail to read the many exceptions, and will not note the provisions for reduction of benefits at any time.

Many physicians in Iowa have worked under the Iowa Emergency Relief Administration medical plan during the past three years. Under this plan there has been an allowance of from \$1.50 to \$2.00 per month per family for a limited emergency type of medical care. This sum did not include any hospitalization, preventive medicine, or physical examinations. Only services for acute illnesses, injuries, and limited care of chronic cases were provided for, yet the amount allotted fell below the requirements on a very limited fee schedule by as much as 75 per cent in some instances.

Recently hospital insurance associations have been offering limited hospital insurance policies throughout the country. The rates are usually seventy-five cents per month for the head of the family with an additional rate of thirty-five to fifty cents per month for dependent members. For this they offer twenty-one hospital days during any one year to the member and usually pay one-half of the bill for the hospitalization of dependents. These are non-profit organizations, yet, for only \$3.30 per month the Group Health Association, Incorporated, purports to furnish adequate medical and surgical care in sickness and accident, preventive medical care, physical examinations, and twenty-one days' hospitalization for any given illness to all members of the employee's family. Such a plan is financially unsound. If it is not subsidized by the government bureau for which the members work, it cannot last, and the members will have paid their money to the association with no chance of receiving the services promised.

The plan seems to be a scheme of those in control of the Home Owners' Loan Corporation, one of whom is closely associated with the Twentieth Century Fund, Inc., of which Edward A. Filene of Boston is listed as president. Perhaps this has no significance, but all members of organized medicine know of the part played by this and other "funds" in attempting to set up systems of governmental medicine in the United States. There is some question as to the extent to which this is a voluntary plan, since the men in control of the Home Owners' Loan Corporation are its organizers, and it provides for the check-off system of payment. No employee will be able to refuse to belong, nor will he be able to withdraw without his superiors knowing of his stand on the subject. Although it is inconceivable that men in positions of trust in a governmental bureau, such as the Home Owners' Loan Corporation, would use any coercion, it is easily understandable that the employees would feel that they must join this, the brainchild of their superiors.

Recently published facts and figures state that the group is now operating a clinic with a staff of a Medical Director, whose salary is \$10,000 a year, net; and three associate physicians, who each receive \$4,800 a year, net. When the three physician members announced their connection with the Group Health Association, their hospital connections were immediately severed by the respective hospital boards, and they were likewise dropped from membership in the District of Columbia Medical Society. However, more recently, the attitude of the hospital trustees has been modified; necessarily so, since "the voluntary hospitals of

Washington participate in the benefits of the Community Chest to which nearly all the employees of the federal government contribute." Independence is expensive, and the hospitals do not wish to jeopardize their participation in the Community Chest benefits. Estimated figures set 115,912 as the number of civil employees of the United States government residing in the area of Washington, D. C. If to this number are added the dependents, the result is 347,736 persons, out of a total population of 486,869, which Group Health Association, seeks to withdraw from the private practice of medicine. It is interesting to note in this connection that the total number of government employees throughout the United States and its territories, plus their dependents, has been roughly figured at 2,500,000, which indeed provides a rather extensive field of medical practice for Group Health Association.

This experiment will be watched with interest by the profession. It should be carefully watched, and as carefully studied by the American Medical Association. According to reports, an advance up to the amount of \$100,000 has already been guaranteed to set the plan in operation. Careful records should be kept to find the actual cost of this medical care. Some type of record should also be maintained to determine the amount which must be spent by the members in addition to their dues in order to supplement the care given under their contract. Only by the accurate compilation of such figures can we know whether an insurance scheme actually costs the individual more or less than when his medical needs are supplied by a physician in the private practice of medicine. Let us, as a group of intelligent medical men, study this scheme with care, and from it we may find material for working out a plan of medical practice, whereby the patient may secure the best possible care at a cost within his reach, and one which provides methods for payment so that the physician will receive an adequate remuneration for his services.

In the final analysis we are the ones most interested in providing the best of care for the sick citizens of the United States. For centuries the medical profession has given of itself to the sick, with little if any thought as to the returns. We are still ready to serve, and will enter heartily into any plan which will give adequate service to the patient, provide the stimulus for research, attract the highest possible type of men to the profession of medicine, keep the problems of medicine under medical control, and assure the medical profession a reasonable financial return.

SECOND NATIONAL SOCIAL HYGIENE DAY

The Second National Social Hygiene Day will be observed throughout the United States, Wednesday, February 2, 1938, with the theme, "Stamp Out Syphilis—Foe of Youth." Physicians are familiar with the dire results of this infection and the alarming spread of the disease. Most startling perhaps is the fact that fifty per cent of the known new cases each year occur in the age group of twenty to thirty years, a group which represents only one-fourth of the nation's population. In an effort to stem the tendency in this direction the American Social Hygiene Association is enlisting the interest of those national organizations whose primary concern is with the problems of young people. Many groups and associations were active during the period of the First National Social Hygiene Day last year. Impressed by the success of that pioneer venture, new co-operating organizations have come forward voluntarily to share in the task of making this second observance an even greater success.

Last February's event resulted in more than 500 conferences and meetings, 135 radio periods and countless numbers of newspaper and magazine comments. The physician plays a dual rôle in this important campaign. He should take his place with the lay members of the community in which he lives as a private citizen who wishes to protect his family. He must also be prepared to assume a more active part in the program, and give of his time and scientific knowledge so that the people of his community may have accurate workable facts at their disposal with which to win this battle against a condition so devastating and so unnecessary. Members of the medical profession in the state of Iowa have been outstandingly helpful in this respect in the past, and a word of appreciation is hereby extended to them. Their continued cooperation in the future is assured by their splendid previous endeavors.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Committee on Child Health and Protection

The Committee on Child Health and Protection of the Iowa State Medical Society met Sunday, December 12, 1937, at the Hotel Fort Des Moines at 11:00 a. m. Those present were as follows:

Committee on Child Health and Protection: R. H. McBride, Sioux City; Lee F. Hill, Des Moines; H. E. Farnsworth, Storm Lake; H. A. Weis, Davenport, and C. P. Phillips, Muscatine.

Medical Economics Committee: T. F. Thornton, Waterloo.

Legislative Committee: Fred Moore, Des Moines.

State Medical Society: Robert L. Parker, Secretary.

State Department of Health: J. M. Hayek, Des Moines.

4-H Clubs: Mrs. Edith Barker, Miss Loran, Mr. John Quist of Ames.

Parent-Teacher Association: Mrs. C. C. Colleston and Mrs. A. E. Anderson of Spencer.

The committee conferred for two hours with representatives of the 4-H Clubs trying to work out satisfactory plans for the annual physical examinations of the 4-H Club boys and girls. The medical profession felt that the present plan of giving free examinations was wrong, because it led the boys and girls to expect free medical service, and because they did not follow up the findings of the examinations and correct whatever defects were found. The 4-H Club representatives were not in favor of having a charge made for the examination. After recessing for dinner, the group met with the Parent-Teacher Association degelates and discussed plans for the Summer Round-Ups. Both groups seemed to be in complete accord as to policy, and it was decided to put that policy in writing and submit it to the county organizations; the State Medical Society to submit it to the county medical societies, and the Parent-Teacher Association to submit it to its county organizations. It was also decided that the Committee on Child Health and Protection, the Medical Economics Committee, and the Public Relations Committee should formulate a policy for the examinations of the 4-H Club boys and girls, and submit it to the officials of that group for their approval.

Dr. Hayek of the State Department of Health then asked for a discussion of the Department's plans for education in the care of premature infants. It was moved and seconded that the committee approve a plan to establish centers for better care of premature infants, and also approve plans for educating doctors and nurses to take better care of such infants. Motion carried.

Dr. McBride was authorized to write an article on prophylactic measures to be used against infectious diseases to be distributed to practitioners in the state. The distribution of Dr. Adair's manual on maternal care to physicians engaged in the practice of obstetrics was approved, as was the insertion with the birth certificate of a slip urging immunization and vaccination at an early date.

Meeting adjourned at 5:30 p. m.

Meeting of the Board of Trustees

The Board of Trustees of the Iowa State Medical Society met in the central office Tuesday, December 14, 1937, at 1:30 p. m. All members of the Board were present, and Dr. Lee F. Hill, editor, and Dr. H. J. McCoy, treasurer, also attended.

First order of business was approval of bills. The second matter was in regard to the publication of a cancer manual. The problem was discussed, and in view of the fact that other groups desired manuals published, and that such manuals would need revision

from time to time, the Board felt the best interests of the society as a whole would not be served by diverting any portion of society funds to the publication of manuals or handbooks. The employment of Miss Patricia Spaulding as secretary of the Speakers Bureau and of Mrs. Dorothy Dolk to take Mrs. Grace McDonald's place was approved. Dr. Lee F. Hill was appointed editor for the year 1938, and Miss Virginia Stewart assistant to the editor. Miss Mary McCord was made executive secretary. The basis of remuneration for mileage was changed from five cents to six cents a mile by action of the Board. The annual audit of the books was authorized.

Meeting adjourned at 4:00 p. m.

Iowa Interprofessional Association

The Executive Council of the Iowa Interprofessional Association, with special representatives from the several component state societies, met at the Kirkwood Hotel in Des Moines, Sunday, December 19, 1937, to discuss plans for an interprofessional program to be held as part of the annual program of each of the five groups in rotation. Present were:

Iowa Pharmaceutical Association, Walter Meads.

Iowa State Dental Society: E. H. Ford.

Iowa State Association of Registered Nurses: Miss Alma Hartz.

Iowa Veterinary Medical Association: H. A. Seidell and Robert D. Wall.

Iowa State Medical Society: R. D. Bernard, Fred Moore, R. L. Parker, J. T. Hanna, R. S. Grossman, and T. F. Hersch.

Dr. Moore explained the set-up of the Interprofessional Association and the value of a common program to all of the groups. Dr. Bernard gave a brief resumé of the work done in organizing county or district interprofessional societies. Mr. Meads read the motion passed at the last regular meeting of the Iowa Interprofessional Association September 19, namely: "That the Iowa Interprofessional Association request the several societies to appoint representatives to meet with the Iowa Interprofessional Association for the purpose of developing an interprofessional program in connection with their respective annual meetings. The date for the meeting of these representatives should be determined by the Executive Council of the Association."

There was a general discussion by all present as to how this idea could be carried out. The two groups which seemed to be in a good position to have an interprofessional program this year were the pharmacists and the nurses. It was generally agreed upon that two programs the first year might be advantageous, provided two of the state societies wish to act this year. The fact that the pharmacists meet in Des Moines in April, and the nurses in Waterloo in October offered additional reasons for two programs in 1938. A program committee of the sponsoring society and one from the Interprofessional Association would be responsible for the meeting. The delegates were asked to report these findings to their societies and the meeting adjourned.

SPEAKERS BUREAU ACTIVITIES

IN RETROSPECT

As another new year approaches, the Speakers Bureau pauses, in retrospect, to review the ones which have rolled past, and to plan for those which are to come. Only by appraising that which has been done can constructive plans be formulated and administered. It seems appropriate at the beginning of 1938 to make such an evaluation, comparing past endeavors and the aims for future achievements.

The end of this year marks the eighth anniversary of the Speakers Bureau, and in that time it has developed from a relatively simple committee to an intricate organization, whose enterprises have had far-reaching results. It has grown from a Bureau which presented two postgraduate courses in 1929, to one which conducted sixteen courses in 1937. This increase has enabled the entire state to be covered, and physicians in all sections have been afforded the opportunity to attend one or more courses. The Bureau does not pride itself upon the greater number of courses given, but rather upon the significance which lies in the facts behind the figures. Many physicians in Iowa have taken advantage of this means of self-education to learn of new advances in medical science, with the result that the people of Iowa will receive the benefit of the newest methods of diagnosis and treatment of disease, and will be informed of preventive measures against those diseases which are avoidable. Thus, the physicians in the state are better able to perpetrate their Hippocratic oath, and to practice more intelligently and thoroughly the profession they have chosen.

Important as this work has been, it has not overshadowed the vital necessity of carrying out a definite program of lay education. Each year has shown a steady increase in the number of discussions presented before lay audiences. In the opinion of many physicians this aspect of the Bureau's activities is of paramount consideration, since it is felt that an educated and enlightened public can more intelligently and effectively cooperate with the physicians of the state in attaining that harmonious relationship so long sought for by the medical profession. Dissemination of accurate knowledge on health and disease has been accomplished throughout the state, with special emphasis being placed on the value of immunization, the need for early diagnosis and prompt treatment, the importance of periodic health examinations, and the possibility of eradicating the venereal diseases. The aim has been to make the people of Iowa realize that disease can be prevented, and that the medical profession stands ready to help at all times in such prevention.

Another feature of the Bureau's service consists of series of addresses which have been given at various colleges in the state. These covered a gen-

eral discussion of various bodily functions and were designed to furnish the students with a fairly comprehensive knowledge of the manner in which their bodies operate and how they are affected by disease. The enthusiasm and appreciation with which these talks have been received have led the Bureau to make plans for more extensive work in this field.

Radio talks on various health subjects have been broadcast weekly for several years. This fall an arrangement was made whereby the broadcasts are made simultaneously from both Stations WOI and WSUI, thus reaching a larger audience. An analysis of the types of talks which drew the greatest number of requests has been made, and every effort has been put forth to present material on the broadcasts which will be most valuable to the people.

Attention should be called to a new service which has been inaugurated during the past year. Weekly news articles have been prepared and sent to various newspapers for publication. These articles have been published in all sections of the state, offering accurate and up-to-date information on health, which can do much to combat false impressions and erroneous facts, spread so freely by quacks and cultists. It is a well established fact that the public is "health" conscious from both the physical and mental standpoints. Therefore, it behooves the medical profession to furnish this information in as accurate a manner as possible, without becoming involved in the actual science of the practice of medicine. In an effort to accomplish this purpose, these press releases have been carefully written and painstakingly edited by a committee.

Plans for the future include the continuation of these various projects and their expansion insofar as possible. Infallibility is not a human characteristic, and the Bureau has undoubtedly made errors during the past years. However, experience gained by this route is invaluable, and past errors will serve as guides to future activities of the Bureau.

RADIO SCHEDULE

WOI and WSUI—Wednesdays at 4:00 p. m.

- | | |
|------------|---|
| January 5 | Nervous Breakdowns, J. E. McFarland, M.D. |
| January 12 | Fatigue, Glenn Doolen, M.D. |
| January 19 | Pneumonia, R. N. Larimer, M.D. |
| January 26 | The Place of the Laboratory in Modern Medicine, Julius Weingart, M.D. |
| February 2 | Eugenics, Anna T. A. Glomset, M.S. |

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*

3407 Lincoln Place Drive, Des Moines

President—MRS. S. E. LINCOLN, 2220 East Thirty-second Street, Des Moines

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

THE HEALTH ESSAY CONTEST

Announcement has just been made of the fifth annual Health Essay Contest, sponsored by the Woman's Auxiliary to the Iowa State Medical Society, and the Speakers Bureau of that organization. The purpose of the sponsors of this contest is to aid in the nationwide program for prevention of highway accidents and to stimulate interest in this important subject among the high school children of our state. The rules of the contest follow:

Subject: "Highway Hazards."

Points to be stressed:

1. Physical conditions which affect driving.
2. Correct application of "first aid" to the injured.
3. Individual responsibility in the
 - A. Cause of accidents.
 - B. Prevention of accidents.
 - C. Observance of highway laws.

(The subject to be discussed primarily from a health standpoint)

Participants: Any high school student in Iowa.

Length of Essay: Not to exceed 1,200 words.

Prizes: First prize, \$20.00; second prize, \$10.00; third prize, \$5.00; and ten one dollar prizes to the next ten highest ranking essays. An additional prize to the winner of first place will be a trip to a centrally located broadcasting station to present the winning essay over the radio. Schools whose essays win first, second and third place will receive a one year's subscription to *Hygeia*, the health magazine.

Time: The contest will open January 10, 1938, and close March 1, 1938. All essays must be in the hands of the Contest Committee Chairman, Mrs. W. A. Seidler, Jamaica, Iowa, by March 1, 1938.

Elimination: The four best essays from each school may be submitted. These essays should be type-

written, double spaced. The student's name should not appear anywhere on the essay but the student's name, town, county, grade and superintendent's name should be typed on a small piece of paper and clipped to the essay. Each essay received at the central office will be given a number, and no judge shall know to which student that number has been assigned.

Judges: Preliminary elimination will be made by members of the Woman's Auxiliary. The final judges will be:

- A. A member of the State Department of Public Instruction.
- B. A member of the State Department of Health.
- C. A member of the Iowa State Medical Society.
- D. Two members of the Woman's Auxiliary to the Iowa State Medical Society.

Basis for Judging Essays: Originality, composition, evidence of study. (Direct quotations must be indicated.)

Announcement: Will be made of the winners March 15, 1938.

For further information the student should confer with the superintendent or English teacher, or write Mrs. W. A. Seidler, Jamaica, Iowa.

The officers and committee workers of your state auxiliary feel that this annual effort in educating our young people is very much worthwhile. As auxiliary members we are all vitally interested in this problem of educating the public. With the proper approach and background this annual health essay contest can truly accomplish great things. An educated high school student of today develops into the intelligent adult and parent of tomorrow. It is the sincere hope of your leaders that each and every member of the auxiliary will respond to this plea to try and create active interest and enthusiasm for this outstanding project. This is one instance in which individual efforts can be utilized to a great advantage.

SOCIETY PROCEEDINGS

Adair County Annual Meeting

Officers for 1938 were elected at the annual meeting of the Adair County Medical Society, held in Greenfield, Friday, December 10. They are as follows: Dr. Lewis H. Ahrens of Fontanelle, president; Dr. Dale D. Cornell of Greenfield, vice president; Dr. A. S. Bowers of Orient, secretary and treasurer; Dr. Ralph E. Wiley of Fontanelle, delegate; and Dr. Eugene Tinsman of Orient, alternate delegate.

Black Hawk County Annual Meeting

Dr. F. Harold Entz was named president elect of the Black Hawk County Medical Society at the annual meeting Tuesday, December 21, in Waterloo. Dr. Fred H. Lohman was installed as president of the society for 1938. Other officers were elected as follows: Dr. Howard J. Hartman, vice president; Dr. Paul T. O'Keefe, secretary and treasurer; Dr. George C. Murphy, delegate; and Dr. E. E. Magee, alternate delegate. All officers are of Waterloo.

Bremer County Annual Meeting

Clayton J. Lundy, M.D., of Chicago, entertained members and guests of the Bremer County Medical Society Thursday, December 16, with a ten reel motion picture film on The Mechanism and Electrocardiographic Registration of the Heart in Health and Disease. The following officers were elected at the annual business session: Dr. M. N. Gernsey of Waverly, president; Dr. P. J. Amlie of Tripoli, vice president; Dr. E. C. Kepler of Waverly, secretary and treasurer. Dinner was served following the business meeting, after which Dr. Lundy delivered a paper on The Prevention, Diagnosis and Treatment of Rheumatic Heart Disease.

E. C. Kepler, M.D., Secretary

Buchanan County Annual Meeting

The Buchanan County Medical Society at its annual meeting held in Independence, Thursday, December 16, elected the following officers: Dr. P. J. Leehey of Independence, president; Dr. R. L. Knipfer of Jesup, vice president; Dr. N. L. Hersey of Independence, secretary and treasurer; Dr. H. A. Householder of Winthrop, delegate; and Dr. F. F. Agnew of Independence, alternate delegate.

Butler County Annual Meeting

Officers elected at the annual meeting of the Butler County Medical Society in Shell Rock, Tuesday, December 14, are: Dr. Fred A. Rolf of Aplington, president; Dr. Bruce Ensley of Shell Rock, vice president;

Dr. Roger James of Allison, secretary and treasurer; Dr. Ensley, delegate; and Dr. John G. Evans of New Hartford, alternate delegate.

Calhoun County Annual Meeting

The present officers of the Calhoun County Medical Society were elected to succeed themselves at the annual meeting of that organization held in Rockwell City, Tuesday, December 14. They are: Dr. P. W. Van Metre of Rockwell City, president; Dr. Francis W. Hobart of Lake City, vice president; Dr. H. H. Harris of Rockwell City, secretary and treasurer; Dr. R. G. Henrichs of Manson, delegate; and Dr. Van Metre, alternate delegate.

Carroll County Annual Meeting

Dr. A. R. Anneberg of Carroll was named head of the Carroll County Medical Society for the ensuing year at the annual meeting held in Carroll, Thursday, December 2. Other officers include: Dr. F. V. Hibbs of Carroll, vice president; and Dr. Paul L. Pascoe of Carroll, secretary and treasurer.

Cerro Gordo County Annual Meeting

Newly elected officers of the Cerro Gordo County Medical Society, named at the annual meeting held in Mason City, Tuesday, December 14, are: Dr. George M. Crabb, president; Dr. E. L. Wurtzer, vice president; Dr. J. E. Houlahan, secretary; Dr. Draper L. Long, treasurer; Dr. H. D. Fallows, delegate; and Dr. Harold W. Morgan, alternate delegate. Dr. Wurtzer is of Clear Lake; all other officers are of Mason City.

Cherokee County Annual Meeting

The annual election of officers for the Cherokee County Medical Society, held in Cherokee, Monday, December 20, resulted as follows: Dr. R. P. Noble of Cherokee, president; Dr. Charles H. Swift, Jr., of Marcus, vice president; Dr. John M. Pope of Cherokee, secretary and treasurer; Dr. C. F. Obermann of Cherokee, delegate; and Dr. L. J. Spinharney of Cherokee, alternate delegate.

Chickasaw County Annual Meeting

Drs. Edward C. Nowak and Paul C. Richmond, both of New Hampton, were elected president and secretary-treasurer, respectively, of the Chickasaw County Medical Society at the annual meeting held recently in New Hampton.

Davis County Annual Meeting

Three Oskaloosa physicians furnished the scientific program for the Davis County Medical Society meeting in Bloomfield, Friday, December 10. Papers were given on Urologic Diagnosis, by George H. Clark, M.D.; Allergy Rhinitis, by Max R. Greenlee, M.D.; and Water Balance, by W. V. Campbell, M.D. The election of officers resulted as follows: Dr. E. E. Gilfillan of Pulaski, president; Dr. William W. Parker of Floris, vice president; Dr. H. C. Young of Bloomfield, secretary and treasurer; Dr. C. H. Cronk of Bloomfield, delegate; and Dr. G. W. Gilfillan of Bloomfield, alternate delegate.

H. C. Young, M.D., Secretary

Decatur County Annual Meeting

Included in the new list of officers for the Decatur County Medical Society, elected Tuesday, December 28, are: Dr. W. Norman Doss of Leon, president; Dr. J. W. Wailles of Davis City, vice president; Dr. E. E. Gamet of Lamoni, secretary and treasurer; and Dr. G. P. Reed of Davis City, delegate.

Dubuque County Annual Meeting

The Dubuque County Medical Society at its annual meeting held in Dubuque, Tuesday, December 14, elected the following officers for 1938: Dr. A. M. Loes, president; Dr. Henry G. Langworthy, first vice president; Dr. William R. Langford of Epworth, second vice president; Dr. Laurence E. Cooley, secretary; Dr. F. W. Meyers, treasurer; and Dr. C. C. Lytle, delegate.

Emmet County Annual Meeting

The following officers were elected to seive the Emmet County Medical Society during 1938, at a meeting held Thursday, December 23: Dr. C. E. Birney of Estherville, president; Dr. Smith C. Kirkegaard of Ringsted, vice president; Dr. M. T. Morton of Estherville, secretary and treasurer; Dr. O. H. Miller of Estherville, delegate; and Dr. E. E. Lashbrook of Estherville, alternate delegate.

M. T. Morton, M.D., Secretary

Greene County Annual Meeting

Members of the Greene County Medical Society elected the following officers for the ensuing year at the annual meeting held in Jefferson, Thursday, December 16: Dr. O. C. Lohr of Churdan, president; Dr. R. E. Parry of Scranton, vice president; Dr. J. R. Black of Jefferson, secretary and treasurer; Dr. G. W. Franklin of Jefferson, delegate; and Dr. L. C. Hanson of Jefferson, alternate delegate.

Henry County Annual Meeting

Friday, December 17, the following officers were named to head the Henry County Medical Society for 1938: Dr. E. J. Lessenger of New London, president;

Dr. B. D. Roberts of Wayland, vice president; Dr. J. W. Laird of Mt. Pleasant, secretary and treasurer; Dr. Lessenger, delegate; and Dr. S. W. Huston of Mt. Pleasant, alternate delegate.

Jackson County

The Jackson County Medical Society met in regular session Friday, December 17, at the Maquoketa Legion Hall in Maquoketa, and the following scientific program was presented: The Diagnosis and Treatment of Common Diseases of the Skin, Ruben Nomland, M.D., of Iowa City; and The Eradication of Tuberculosis, J. Carl Painter, M.D., of Dubuque. Both addresses were illustrated by lantern slides.

William Lowder, M.D., Secretary

Jasper County Annual Meeting

Dr. E. F. Besser of Newton was elected president of the Jasper County Medical Society at the annual meeting held in Newton, Tuesday, December 7. Dr. Thomas J. Wright of Newton was chosen as vice president; and Dr. L. E. Fellows, also of Newton, secretary and treasurer.

Jefferson County Annual Meeting

Results of the annual election of the Jefferson County Medical Society held in Fairfield, Tuesday, December 14, are: Dr. Roy A. McGuire, president; Dr. Kenneth G. Cook, vice president; and Dr. Ludwig Gittler, secretary and treasurer. All officers are of Fairfield.

Johnson County Annual Meeting

The Johnson County Medical Society met in regular session Wednesday, December 1, for the annual election of officers, which resulted as follows: Dr. Julian D. Boyd, president; Dr. F. J. Rohner, vice president; Dr. W. M. Fowler, secretary and treasurer; and Drs. George C. Albright and E. M. MacEwen, delegates. The following scientific papers were presented: A Clinical Definition of the Psychoneuroses, William Malamud, M.D.; and The Ingredients of Psychoneurosis in Normal Behavior, Andrew H. Woods, M.D.

W. M. Fowler, M.D., Secretary

Lee County Annual Meeting

Guest speakers furnished the following scientific program for the Lee County Medical Society when that organization met in Donnellson, Tuesday, December 14: Experiences in the Recent Epidemic of Encephalitis, Type B, P. J. Zentay, M.D., of St. Louis; Principles of Treatment for Fractures of the Elbow and Wrist, J. Albert Key, M.D., of St. Louis; Recent Advances in the Prevention and Treatment of Deafness, George E. Shambaugh, M.D., of Chicago; and Newer Methods in the Treatment of Fractures of the Hip, Dr. Key. The annual election of officers held during the business session resulted as follows:

Dr. Frank L. Poepsel of West Point, president; Dr. John R. Rankin of Keokuk, vice president; Dr. F. B. Dorsey of Keokuk, secretary and treasurer; Dr. B. J. Dierker of Fort Madison, delegate; and Dr. Frank M. Fuller of Keokuk, alternate delegate.

Linn County

Frederic Jay Cotton, M.D., professor of surgery at Harvard Medical School, Boston, was guest speaker for the Linn County Medical Society at the meeting held in Cedar Rapids, Tuesday, December 7. Dr. Cotton's address was entitled, Fractures and the General Practitioner. Arthur Steindler, M.D., professor of orthopedic surgery at the State University of Iowa, College of Medicine, opened the discussion of the main paper, followed by W. C. Goenne, M.D., of Davenport, and B. J. Moon, M.D., of Cedar Rapids.

Lyon County Annual Meeting

Officers elected at the annual meeting of the Lyon County Medical Society, held at the home of Dr. George M. DeYoung in George, on Thursday, December 16, are: Dr. A. P. Stewart of Inwood, president; Dr. E. S. Aeilts of Little Rock, vice president; Dr. L. L. Corcoran of Rock Rapids, secretary and treasurer; and Dr. Walter Vander Wilt of Rock Rapids, delegate.

L. L. Corcoran, M.D., Secretary

Marion County Annual Meeting

A joint meeting of the Marion County Veterinary Medical Society and the Marion County Medical Society was held Thursday, December 2, in Knoxville. A short business session of the physicians was held immediately preceding the six-thirty dinner for the purpose of electing new officers for the year 1938. Results are: Dr. F. M. Roberts of Knoxville, president; Dr. E. C. McClure of Bussey, vice president; Dr. John R. Wright of Knoxville, secretary and treasurer; Dr. Corwin S. Cornell of Knoxville, delegate; and Dr. D. S. Burbank of Pleasantville, alternate delegate. The Medical Society entertained as its guest speaker, Tom B. Throckmorton, M.D., of Des Moines, whose subject was Some Remarks on Virus Disease of Man, with special reference to the neutrotropic type; while the veterinarians' guest speaker was H. E. Beister, D.V.M., of Ames, who spoke on Some of the Neutrotropic Infections, with particular reference to the polio virus group and the genus *Listerella*. A feature of the evening's program was an address by Dr. Roberts on Twenty Years in the Practice of Medicine in Marion County. (This address will be found in the History of Medicine Section of this issue of the JOURNAL.) Dr. Roberts is now entering upon his fourth term as president of the Marion County Medical Society.

J. R. Wright, M.D., Secretary

Marshall County Annual Meeting

Dr. Raymond S. Grossman was selected as president of the Marshall County Medical Society at the annual meeting held in Marshalltown, Tuesday, De-

cember 7. Dr. Grove W. Harris was named vice president, and Dr. Rodney C. Wells was re-elected secretary and treasurer. All officers are of Marshalltown.

Mills County Annual Meeting

Officers elected at the annual meeting of the Mills County Medical Society, held in Glenwood, Thursday, December 16, include: Dr. James Marr of Silver City, president; Dr. E. C. Magaret of Glenwood, vice president and Dr. Ward A. DeYoung of Glenwood, secretary and treasurer.

Page County Annual Meeting

The annual election of officers for the Page County Medical Society was held Monday, December 13 at a meeting in Clarinda. Results are: Dr. Wayland H. Maloy of Shenandoah, president; Dr. J. W. Seldards of Clarinda, vice president; Dr. F. H. Clark of Clarinda, secretary and treasurer; Dr. J. F. Aldrich of Shenandoah, delegate; and Dr. M. O. Brush of Shenandoah, alternate delegate.

Pottawattamie County Annual Meeting

Dr. Arthur C. Brown was elected president of the Pottawattamie County Medical Society, at the annual meeting held in Council Bluffs, Thursday, December 9. Other officers are: Dr. R. M. Collins, vice president; Dr. Fred H. Beaumont, secretary and treasurer; Dr. F. Earl Bellinger, delegate; and Dr. G. V. Caughlan, alternate delegate. All officers are of Council Bluffs.

Poweshiek County Annual Meeting

The Poweshiek County Medical Society held its annual meeting Tuesday, December 21, at the Monroe Hotel in Grinnell, and the following officers were elected: Dr. J. R. Parish of Grinnell, president; Dr. F. E. Simeral of Brooklyn, vice president; Dr. C. E. Harris of Grinnell, secretary; Dr. J. T. Padgham of Grinnell, treasurer; Dr. S. D. Porter of Grinnell, delegate; and Dr. J. L. Ravitts of Montezuma, alternate delegate.

Ringgold County Annual Meeting

At a meeting of the Ringgold County Medical Society, Thursday, December 23, the following officers were elected for the ensuing year: Dr. O. L. Fullerton of Redding, president; Dr. F. C. Smith of Mt. Ayr, vice president; Dr. J. W. Hill of Mt. Ayr, secretary and treasurer; Dr. E. J. Watson of Diagonal, delegate; and Dr. C. L. Seaman of Mt. Ayr, alternate delegate.

J. W. Hill, M.D., Secretary

Sac County Annual Meeting

Officers chosen by the Sac County Medical Society at a meeting held in Sac City, Monday, December 13, include the following: Dr. J. J. McCarl of Sac

City, president; Dr. G. H. Bassett of Sac City, secretary and treasurer; and Dr. J. R. Dewey of Schaller, delegate.

Scott County

Leon Unger, M.D., assistant professor of medicine at Northwestern University Medical School, and Director of the Asthma and Hay Fever Clinic of the School, was guest speaker for the Scott County Medical Society, Tuesday, December 7. Dr. Unger spoke on Eczema in Children. H. A. Meyers, M.D., Secretary

Story County Annual Meeting

The annual election of officers for the Story County Medical Society held in Nevada, Tuesday, November 30, resulted as follows: Dr. S. B. Goodenow of Colo, president; Dr. G. E. McFarland, Jr., of Ames, vice president; Dr. E. B. Bush of Ames, secretary and treasurer; Dr. Bush Houston of Nevada, delegate; and Dr. B. D. Atchley of Ames, alternate delegate.

Tama County Annual Meeting

The Tama County Medical Society met Thursday, December 16, and elected the following officers to serve during 1938: Dr. A. J. Wentzien of Tama, president; Dr. A. J. Havlik of Tama, vice president; Dr. C. W. Maplethorpe of Toledo, secretary and treasurer; Dr. A. A. Pace of Toledo, delegate; and Dr. Wentzien, alternate delegate.

Van Buren County Annual Meeting

Election of officers for the Van Buren County Medical Society, held in Keosauqua, Thursday, December 16, resulted as follows: Dr. Roscoe Pollock of Douds-Leando, president; Dr. D. G. Matthews of Milton, vice president; Dr. C. R. Russell of Keosauqua, secretary and treasurer; Dr. L. A. Coffin of Farmington, delegate; and Dr. E. E. Sherman of Keosauqua, alternate delegate. C. R. Russell, M.D., Secretary

Wapello County Annual Meeting

Ira N. Crow, M.D., of Fairfield, presented a paper on Mastoiditis at the meeting of the Wapello County Medical Society held in Ottumwa, Tuesday, December 7. New officers elected at the annual business meeting are: Dr. L. A. Taylor, president; Dr. R. O. Hughes, vice president; Dr. Edward B. Hoeven, secretary and treasurer; Dr. E. B. Howell, delegate; and Dr. W. C. Newell, alternate delegate. All officers are of Ottumwa.

Washington County Annual Meeting

The Washington County Medical Society held its annual business meeting and election of officers for 1938, Tuesday, December 7, with the following results: Dr. A. K. Droz of Washington, president; Dr. C. L. Worley of Riverside, vice president; Dr. W. S. Kyle of Washington, secretary and treasurer; Dr. W. L. Alcorn of Washington, delegate; and Dr. E. E. Stutsman, also of Washington, alternate delegate. W. S. Kyle, M.D., Secretary

Winneshiek County Annual Meeting

Dr. Lester E. Larson of Decorah was elected president of the Winneshiek County Medical Society at the annual meeting of that organization held Thursday, December 9 in Decorah. Dr. L. J. Hospodarsky of Ridgeway was re-elected as secretary and treasurer, and Dr. A. F. Fritchen of Decorah was chosen to represent the society as a delegate to the state convention.

Woodbury County Annual Meeting

The Woodbury County Medical Society met in regular session Tuesday, December 17, at the West Hotel in Sioux City. G. T. Notson, D.D., Superintendent of the Methodist Hospital in Sioux City, delivered the address of the evening on the subject, Trends Toward State Medicine. Election of officers resulted as follows: Dr. L. E. Pierson, president; Dr. I. U. Vangsness, vice president; Dr. W. H. Gibbon, secretary and treasurer; Dr. T. R. Gittins, delegate; and Dr. C. P. McHugh, alternate delegate. All officers are of Sioux City. W. H. Gibbon, M.D., Secretary

Wright County Annual Meeting

New officers for the Wright County Medical Society, elected at a meeting held in Clarion, Tuesday, December 14, are: Dr. G. H. Steele of Belmond, president; Dr. B. L. Basinger of Goldfield, vice president; and Dr. J. R. Christensen of Eagle Grove, secretary and treasurer.

Sioux Valley Medical Society

The annual winter meeting of the Sioux Valley Medical Society will be held January 19 and 20, 1938, at the Cataract Hotel in Sioux Falls, South Dakota. The following speakers are on the program: Charles N. Hensel, M.D., of St. Paul, associate professor of medicine, University of Minnesota Medical School, who will conduct a clinic and address the group on The Irritable Heart With and Without Valve Lesions; Alfred W. Adson, M.D., of Rochester, professor of neurosurgery, University of Minnesota, Graduate School of Medicine, subject to be announced; Roger L. J. Kennedy, M.D., of Rochester, assistant professor of pediatrics, University of Minnesota, Graduate School of Medicine, who is scheduled to present a clinic and a paper on Bone Changes That Take Place in Various Diseases in Infants and Children; Jay A. Myers, M.D., of Minneapolis, professor of medicine and preventive medicine and public health, University of Minnesota, Graduate School of Medicine, who will speak on Controlling Tuberculosis in a Community; LeRoy H. Sloan, M.D., of Chicago, associate professor of medicine, University of Illinois, College of Medicine, who will give an address on The Correlation of the Clinical Picture of Acute Vascular Insults; Clifford J. Barborka, M.D., outstanding internist of Chicago, who will read a paper on Treatment by Diet in Disease; August A. Werner, M.D., prominent speaker and author of St. Louis, who will present an address on Anterior Pituitary Gonad Relationship

in the Female, with clinical application; and James J. Callahan, M.D., of Chicago, who will speak on Fractures of the Neck of the Femur, with lantern slide demonstration, and conduct a general round table discussion on the subject of fractures.

The annual banquet is scheduled for Wednesday evening, January 19, and guest speaker for this occasion will be Dr. Adson of Rochester, president of the Minnesota State Medical Association for the current year. His subject is Medical Economics.

PERSONAL MENTION

Dr. Marvin J. Blaess of Marshalltown sails from New York, Saturday, January 15, on the Seventh Annual Cruise Congress of the Pan-American Medical Association to Havana and the West Indies. Dr. Blaess has been invited to lecture before the eye section on "The Surgical Treatment of Glaucoma and Cataract."

Dr. John A. Liken, who has practiced medicine in Villisca for the past seven years, has closed his office in that locality, and moved to Creston.

Dr. Fred M. Smith, professor of theory and practice of medicine, at the State University of Iowa, College of Medicine, has been named editor-in-chief of the American Heart Journal. Dr. Horace M. Korns, also of the faculty of the State University of Iowa, College of Medicine, has been appointed as one of the publication's three associate editors.

Dr. James E. Murtaugh has arrived in Charles City to be associated in the practice of medicine with Dr. Charles W. McQuillen. Dr. Murtaugh was graduated from Loyola University School of Medicine, Chicago, in 1933, and interned at St. Anthony's Hospital in Chicago.

Dr. Jacob F. Schultz, assistant in the department of ophthalmology, University Hospitals, Iowa City, for the past four and one-half years, has located in Houston, Texas, where he will enter the private practice of medicine, specializing in diseases of the eye.

Dr. H. F. Turner, formerly of Sumner, has left that city, and arrived in Marshalltown, where he will assume his duties as head surgeon for the Iowa Soldiers Home, filling the vacancy created when Dr. C. E. Irwin became superintendent of the Hospital for Epileptics and School for Feeble-minded at Woodward.

MARRIAGES

The marriage of Miss Frances Louise Mast of Crawfordsville to Dr. John Thomas Hanna of Burlington took place Friday, December 24, in Oelwein. The bride is a graduate of the Mercy Hospital School of Nursing at Burlington, and has been employed in the University Hospitals at Iowa City for the past year. The couple will be at home in Burlington, where Dr. Hanna has been engaged in the practice of medicine for a number of years.

DEATH NOTICES

Porterfield, Frank William, of Waterloo, aged seventy-five, died December 21, in the Illinois Central Hospital in Chicago, as the result of pneumonia which developed after an operation for uremic poisoning. He was graduated in 1879 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Black Hawk County Medical Society.

Tamisiea, Hugh, of Missouri Valley, aged sixty-one, died December 18, following a heart attack. He was graduated in 1902 from the State University of Iowa, College of Medicine, and had long been a member of the Harrison County Medical Society.

Willet, Charles Austin, of Norwalk, aged sixty-one, died suddenly, December 29. He was graduated in 1902 from the Drake University College of Medicine, Des Moines, and had long been a member of the Polk County Medical Society.

STATE DEPARTMENT OF HEALTH

(Continued from page 20)

to the Iowa State Department of Health. Deaths for the first ten months totaled 79.

WHOOPIING COUGH IN IOWA

Comparison of cases reported in 1937 with the expected number of cases, based on a nine-year average for the period 1928-1936.

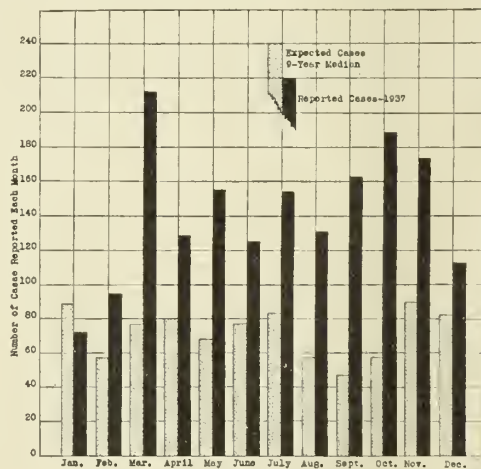


Fig. 10

PREVALENCE OF DISEASE

	Nov. '37	Oct. '37	Nov. '36	Most Cases Reported From
Diphtheria	17	14	19	Scott
Scarlet Fever	746	309	306	Polk, Marion, Des Moines, Lee
Typhoid Fever	7	33	16	Polk
Smallpox	152	20	19	Mahaska, Cass
Measles	17	12	11	Keokuk, Woodbury
Whooping Cough	172	188	136	Dubuque, Story
Cerebrospinal Meningitis	5	4	5	(For State)
Chickenpox	332	106	386	(For State)
Mumps	32	63	66	Lyon, Washington
Poliomyelitis	22	46	12	(For State)
Tuberculosis	87	71	62	(For State)
Undulant Fever	18	7	9	(For State)
Syphilis	293	394	110	(For State)
Gonorrhea	117	232	131	(For State)

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk
DR. JOHN T. MCCLINTOCK, Iowa City
DR. R. T. LENEGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines
DR. WALTER L. BIERRING, Des Moines
DR. WILLIAM JEPSON, Sioux City

Washington County in the March of Human Progress*

MARVIN F. HAYGOOD, M.D., C.P.H.

Director of Social Health Services, State Department of Health, Des Moines

Regardless of what may be wrong with our present status of civilization, progress in the conservation of human welfare is definitely marching forward. On every hand we hear complaints of certain practices of our people. The office holder is possibly accused of using his position to obtain for his cousins, uncles, aunts, or other relatives and close personal and political friends, certain advantages. From some quarters we hear lamentations of the new departures in social customs of our young people; short skirts, abbreviated bathing suits, and many others. Probably, these may be among the numerous menaces to man and his future, but in spite of all this, we are making obvious progress in affairs of deep spiritual worth. We are more and more definitely answering the question "Am I my brothers' keeper?"

We, here today, are privileged to participate in the twenty-fifth anniversary celebration of a most important, even sacred, event in the march of human progress. It was through the choice and decree of an enlightened people that this splendid institution known as the "Washington County Hospital" had its birth. Several years ago, and before I had set foot on Iowa's fertile soil, I read with keen interest the story of your efforts and campaigns to bring into being this child of your thoughts, your labors and your love. Since you have made its existence possible, this child has ministered to more than fifteen and a quarter thousand of your people. We have no means of measuring the number of persons within the limits of Washington county who are still

in the "land of the living" and enjoying a larger measure of health and happiness by reason of the ministrations of this twenty-five year old youngster, but the names would, no doubt, constitute a long list. Since July 16, 1912, it has not been necessary for you to speed your loved ones to some distant medical center, and place them among strangers when acute disease caused serious affliction. Your efforts have made possible the nursing, medical and hospital services of the highest order at home, by and among close friends and relatives. To you this is no longer a theory, but has been a reality for a quarter of a century.

Some of your neighbors, both near and far, have followed your splendid example and have heeded the "Great Physician's" command to "go thou and do likewise." You, my friends, deserve the hearty congratulations of all who place human affairs above material things. Future generations will rise up and call you blessed. It is to be hoped that the sixteenth of July will not come when the citizens of Washington County will omit the celebration of the attainment of this goal.

All of us look forward to the time when we shall have before us a broader vision of the worth of human beings. We would like to think that eventually our children and our mothers will receive, at least, as much consideration at the hands of government as do our pigs, cows and trees. We somehow have been inclined to think that the Lord would take care of the former, but that He had entrusted the latter to our keeping. It is our belief that the influence of your achievement will spread to all sections of the civilized world, and that peoples everywhere may share in the benefits of a

* Address presented at the Twenty-fifth Anniversary of the Washington County Hospital, Washington, Iowa, July 16, 1937.

practicable and tried plan for the alleviation of suffering and the restoration of health. Cities and states had, for many years, engaged in the development of hospitals for specified population groups, but yours was the first rural community type hospital founded for all of the peoples of a county, built and operated from the common purse. Here, you are able to render high-grade, sympathetic service, even to those among you who may be temporarily or permanently "without money and without price."

As abundant as have been the fruits of your labors, you did not rest on your laurels when you had brought into existence this institution for the cure of the sick, and for the healing of the wounded. You visualized the full significance of the old adage that "an ounce of prevention is worth a pound of cure"; so on April 1, 1930, you established a program, countywide in its scope of service, having for its purpose the keeping of as many of your people out of your hospital as possible. You realized that, although treatment could be scientifically, economically, and humanely administered within the walls of your hospital, it was unnecessary for your people to become sick or wounded in many instances. You believed that the full force of our knowledge of preventive medicine should be transmitted to the people of Washington county in adequate degree. You appreciated the fact that much time could be saved, and that physical, as well as mental, disability, suffering, and anguish, and economic loss could and must be prevented through the establishment of a whole-time health unit. Now, in your midst and working in your behalf are these two agencies; one for the restoration of health to the unfortunate person who has temporarily, at least, lost that valuable asset, and the other which is set up not for the treatment of the sick, but for the sole purpose of protecting the community from unnecessary disease.

I know you are much gratified with the results of your labors, but you and the future citizens of the great county will not be satisfied to tolerate the depredations of many of our still unconquered enemies. We are still menaced by a long list of common communicable diseases, such as scarlet fever, measles, the common cold, smallpox, pneumonia, influenza, tuberculosis, and whooping cough, that still claim their victims by the hundreds. Cancer, dental caries, rheumatism, diabetes, the hazards of childbearing, and the ill health of infants are still to be reckoned with. Not until these, through the combined forces of curative and preventive measures, have been com-

pletely annihilated, can we consider the battle ended and the victory won. Until the arrival of such a time may I beseech you to renew your efforts, increase your determination, fight with increased vigor, that your people may realize a full and overflowing measure of freedom from their most formidable foe—ill health.

I have carefully refrained from paying tribute, either to the officers or privates in the ranks of Washington County's army for health, who have made vigorous and prolonged battle against disease. Should such be attempted I am sure the names of some who have rendered heroic service might, inadvertently and unfortunately, be omitted. To your "Commander-in-Chief", however, our commendations cannot be too hearty, nor our admiration too great. He has carried on through adversity, and defied discouragement. Closest to his heart has been the welfare of his people. I hope the end of his journey is far away; but when that end is reached, may you invite him to a long rest in the shadow of this splendid institution, the nativity of which he attended, and on these beautiful grounds, dedicated to the welfare of people he loved. Over this, his final berth, I suggest the placement of a tablet inscribed "He lived not by the side, but in the middle of the road, and was a friend to man."

Twenty Years in the Practice of Medicine in Marion County*

FRANCIS M. ROBERTS, M.D., Knoxville

Since the first day of November, 1917, your retiring president has been a resident of Knoxville and has been engaged in the general practice of medicine in Marion county. These years have been happy ones, because they have been filled with the richness of pleasant associations, which have been abundantly helpful to me, and I trust in like manner to you, because of contact with scientifically minded members of the profession, who were free from the maligning effects of selfishness and jealousy.

To say that nothing has transpired during these twenty years to rock the ship of medical history in Marion county would be a wilful departure from the true situation; but to say that nothing approaching disaster has happened to this admirable ship, is in keeping with the true status of affairs. A captain has been elected annually,

* President's address delivered before the Marion County Medical Society, Knoxville, December 2, 1937.

and he, together with the membership as crew, has planned wisely, on almost all occasions, with the result that the "gallant ship" floats today, at a peaceful mooring, with a united organization, planning broadly and deeply for enlarged achievements.

November 1, 1917, found many of the physicians in Marion county in active service in the army of the world war. The few who were left at home worked hard and rendered a valuable service; but in spite of their untiring efforts, people died by the scores because of the influenza epidemic of 1917 and 1918. No ailment so destructive to human life; no epidemic so depressing in its effects, has since, and probably never before, found a place in the medical history of Marion county. * * * The allied forces were rewarded with success, without the loss of a physician from Marion county by disease or injury. Certainly this is a bit of history which the Marion County Medical Society is pleased to record.

The federal government on October 21, 1920, leased from the state of Iowa, the defunct hospital for inebriates at Knoxville, and converted it into a psychopathic hospital. It was designated as a United States Public Health Hospital until May 9, 1922, when the government purchased the institution, after which it was known as a United States Veterans Bureau Hospital. Its official title has been frequently changed but at this time it is known as the Veterans Administration. From a meager beginning a number of new units have been added until it now provides shelter for about 1,000 patients. A personnel of about 250 is necessary for the proper care of these unfortunate individuals. We have heard no more than a minimum of complaints from friends and relatives regarding their treatment. This leads us to speak in complimentary terms of those who have rendered faithful service in the care of these victims of war. * * * The annual programs sponsored by the local medical society of the Veterans Administration have afforded a number of rare treats to the medical profession of southern Iowa. We desire, therefore, to express an earnest appreciation of the Marion County Medical Society for the many courtesies extended and the prevailing spirit of friendship that has characterized our relations with the Veterans Administration.

To be counted a life member of the Iowa State Medical Society is an enviable distinction which two of our members have earned in the past score of years. They are: Dr. S. W. Thomas, deceased, and Dr. E. C. McClure of Bussey, both of whom practiced medicine continuously in Mar-

ion county for more than thirty years. This coveted honor was not attained by indifference, but by a fidelity of purpose to promote by every honorable effort the humanitarian concepts of our worthy organization. We take this opportunity to congratulate them for their splendid record and unflinching loyalty to the profession.

It is with marked respect and reverence that we make mention of the members of our society who have been called by the "Grim Reaper" during the past twenty years. They are: Dr. Ida Bailey, Iowa City; Dr. H. C. Hooper, Hartford; Dr. W. H. Axline, Fairfield; Dr. W. H. Merritt, Pleasantville; Dr. Eli Whitlatch, Columbia; Dr. A. S. Shafer, Columbia; Dr. L. E. Park, Tracy; Dr. H. C. Payne, Pella; Dr. J. V. Brann, Knoxville; Dr. J. W. Finarty, Knoxville; Dr. C. M. Harrington, Chicago; Dr. S. W. Thomas, Melcher; Dr. W. L. Allen, National City, California; Dr. Roy Moon, Attica; Dr. C. W. Noble, Dallas; Dr. George Donohue, Cherokee, and Dr. C. W. Pitt, Afton. This illustrious list of names calls to mind many pioneers, who have braved the storms of winter on horseback, who practiced medicine with saddle bags, who traveled winding paths through swamps, tall grass and wooded hills, to relieve the ills of those who sought their advice and comforting counsel. It is they whom we hold in honored memory in recognition of their untiring efforts under physical handicaps unknown to the practitioner of today.

The roster of presidents who have served the society since 1917 are as follows. Dr. E. C. McClure, 1917 to 1919; Dr. J. R. Wright, 1920; Dr. J. J. Sybenga, 1921; Dr. F. M. Roberts, 1922; Dr. Roy Moon, 1923; Dr. C. S. Cornell, 1924; Dr. C. I. Fox, 1925; Dr. H. L. Bridgeman, 1926; Dr. J. F. Gray, 1927; Dr. F. M. Roberts, 1928; Dr. Carl Aschenbrenner, 1929; Dr. H. C. Payne, 1930; Dr. H. E. White, 1931; Dr. D. S. Burbank, 1932; Dr. F. P. Ralston, 1933; Dr. E. P. Bell, 1934; Dr. H. C. Payne, 1935; Dr. H. C. Vander Meulen, 1936, and Dr. F. M. Roberts, 1937. To say that these members have given of their time, and talent to promote the best interests of the society is putting it mildly. Each one has cooperated with the secretary and the program committee to make each meeting a happy and instructive occasion, and in these respects the society has not been disappointed.

The secretaries who have given greatly of their physical and mental resources to promote the general welfare of our society are as follows: Dr. J. M. Weiss, 1917 to 1918; Dr. C. S. Cornell, 1919 to 1922; Dr. J. R. Wright, 1923 to 1925;

Dr. C. S. Cornell, 1926 to 1934; Dr. E. C. McClure, 1935; and Dr. J. R. Wright, 1936 to 1937. These are the secretaries that have served the society well during the past two decades. Each has worked steadfastly to keep the organization on a high plane. No other officer of the society spends so much time in attending to details and arranging programs as an efficient secretary. His activities and well directed efforts are necessary for interest, growth and development. He must be alert, active and interested in every detail. For him to be neglectful, indifferent or negligent means a decline of interest to the low level where the society ceases to function as an active organization. We are pleased to state that the Marion County Medical Society has had, and now has, an enviable standing among the county units of the state, and in recognition we must give the larger measure of credit to the painstaking services rendered by our secretaries.

* * * * *

During the past twenty years a number of interesting and instructive programs have been given in cooperation with the local Veterinary Medical Association. It is our opinion that any county medical society makes a mistake in neglecting to encourage the friendly assistance and cooperative spirit of the men of the Veterinary Medical Association. We have found them, on all occasions, men of talent and ability, highly trained in their respective work and cordially helpful in combating diseases common to men and animals. Permit me to say, that all that has been said with reference to the members of the Veterinary Medical Association, may aptly apply to our fellow townsmen and local veterinarian, Dr. C. J. Scott, an untiring worker and the present secretary-treasurer of the Iowa State Veterinary Medical Association.

During the past twenty years no other subject has been so much discussed by the members of this society, without a satisfactory solution of the problem at hand, as that of rendering medical services to the indigent. From time-to-time various plans have been in operation but none has met with the approval of the society as a whole. The war days were followed by dire business disasters, a state of general depression swept over the country, firms and factories ceased to operate, banks closed their doors by the hundreds, labor could find no refuge, agriculture and stock raising were caught in the maelstrom and a general state of bankruptcy ensued. The result was that many counties in Iowa were compelled to adopt the Iowa Emergency Relief Administration

plan of giving medical aid to the poor and Marion county came within that list.

Dr. E. E. Shaw, of Indianola, a member of the Medical Economics Committee, wrote an editorial which was published in the November issue of the JOURNAL of the Iowa State Medical Society. A few of the significant excerpts taken from it afford the latest survey of this highly controversial subject.

* * * * *

On the basis of the foregoing, we are led to conclude that we will be called upon next year to adopt some different plan of medical relief. Therefore, we believe it would be well for every member to study the situation, carefully, so that the society may be prepared to act wisely when that day arrives.

The physicians of Marion county have had mutual cooperation with the overseers of the poor, the county welfare bureau, the county social service and the county emergency relief; as each has been designated at intervals during the past twenty years. The physicians have also had wide and varied experiences with the board of supervisors, the members of which have been conversant with the financial situation, and many other problems related to the care of the indigent. The individuals who have constituted these various official groups have been courteous even when the problems were vexing and difficult of solution. We are confident that these public servants have rendered a valuable service in spite of postwar conditions and stubborn difficulties. We take this occasion to express our appreciation for the courteous cooperation extended and the good will afforded.

We wish to submit that as a member of the Marion County Medical Society we entertain for it a deep sense of satisfaction and appreciation because its history is one of continuous and substantial progress. Typhoid, malaria, diphtheria and other diseases were endemic until recently and exacted a heavy toll of human life. Within the past twenty years they have been almost eradicated by dogged determination of loyal physicians, the use of prophylactic measures and medicinal preparations. The results of their beneficent efforts merit the confidence and support of all, that even greater achievements may be attained for health and longevity.

In conclusion we feel the urge to be prophetic and forecast that the Marion County Medical Society will, in the coming years, sustain the enviable position which it now holds and that added laurels will crown its future efforts.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE BUSINESS SIDE OF MEDICAL PRACTICE—By Theodore Wiprud, executive secretary of the Medical Society of Milwaukee County. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$2.50.

CRIPPLED CHILDREN—Their Treatment and Orthopedic Nursing—By Earl D. McBride, M.D., assistant professor of orthopedic surgery, University of Oklahoma, School of Medicine. Second edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$3.50.

A DIABETIC MANUAL—By Elliott P. Joslin, M.D., clinical professor of medicine, Harvard Medical School. Sixth edition, thoroughly revised; illustrated. Lea and Febiger, Philadelphia, 1937. Price, \$2.00.

DISEASES OF THE SKIN—By Oliver S. Ormsby, M.D., clinical professor and chairman of the department of dermatology, Rush Medical College of the University of Chicago. Lea and Febiger, Philadelphia, 1937. Price, \$12.00.

EYESTRAIN AND CONVERGENCE—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., London, 1937. Price, 7s.6d. net.

EXTERNAL DISEASES OF THE EYE—By Donald T. Atkinson, M.D., consulting ophthalmologist to the Santa Rosa Infirmary, San Antonio, Texas. Illustrated with 494 engravings. Lea and Febiger, Philadelphia, 1937. Price, \$3.00.

GENERAL HYGIENE AND PREVENTIVE MEDICINE—By John Weinzierl, M.S., Ph.D., Dr. P.H., late professor of bacteriology and director of the Alice McDermott Foundation of the University of Washington. Lea and Febiger, Philadelphia, 1937. Price, \$4.00.

INTERNATIONAL CLINICS, Volume III, Forty-seventh Series—Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. J. B. Lippincott Company, Philadelphia and London, 1937.

METHODS OF TREATMENT—By Logan Clendening, M.D., clinical professor of medicine, Medical Department of the University of Kansas. Sixth edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$10.00.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS—By John Albert Key, M.D., clinical professor of orthopedic surgery, Washington University School of Medicine; and H. Earle Conwell, M.D., Birmingham, Alabama. Second edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$12.50.

MATERIA MEDICA. PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING—By Walter A. Bastedo, M.D., consulting physician, St. Luke's Hospital, New York. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.

SYNOPSIS OF GENITO-URINARY DISEASES—By Austin L. Dodson, M.D., professor of surgery, Medical College of Virginia, Richmond. Second edition, with 112 illustrations. The C. V. Mosby Company, St. Louis, 1937. Price, \$3.00.

A TEXTBOOK OF MEDICINE—By American Authors. Edited by Russell L. Cecil, M.D., professor of clinical medicine, Cornell University Medical College. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$9.00.

TWEEDY'S PRACTICAL OBSTETRICS—Revised and largely rewritten by Bethel Solomons, M.D., gynecologist, Dr. Stevens' Hospital, Dublin. Seventh edition. Oxford University Press, London and New York, 1937. Price, \$8.75.

BOOK REVIEWS

EMOTIONAL ADJUSTMENT IN MARRIAGE

By Le Mon Clark, M.S., M.D., Assistant in obstetrics and gynecology, University of Illinois, College of Medicine. The C. V. Mosby Company, St. Louis, 1937. Price, \$3.00.

This volume is for both the physician and layman, since its aim is educational. It is a well known fact that many of the difficulties in marriage arise from sex maladjustments. In spite of the fact that these cause much unhappiness and often ill health, physicians have frequently failed to give them due consideration and patients have been given faulty advice or none at all. A perusal of this book will, I believe, convince these physicians of the seriousness of such problems and materially aid them in giving advice. The lay person will find the book easily understood and quite complete.

A. D. J.

INTERNATIONAL CLINICS

Volume III, Forty-seventh Series. Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. J. B. Lippincott Company, Philadelphia and London, 1937.

This is another excellent number of the International Clinics containing presentations of a wide variety of medical subjects. The first part of the volume consists of medical clinics with case presentations at the Johns Hopkins Hospital. The remainder of this volume presents numerous contributions by various authors on pertinent subjects.

The clinic of Louis G. Herrmann of Cincinnati on peripheral vascular diseases is one of the most interesting and valuable contributions, including a classification, a discussion of disturbed physiology, and case reports illustrating various types of cases. Passive vascular exercises are evaluated and the indications and contraindications for their use are enumerated. Coronary Thrombosis and Cardiac Infarction by George Herrmann of Galveston, Texas, is an exceedingly practical discussion.

It is impossible properly to evaluate such a wide variety of papers in a review of this nature. The careful reading of these volumes cannot fail to increase one's knowledge and help the physician to keep alert to progress in medicine.

D. H. K.

INJECTION TREATMENT OF HERNIA

By Carl O. Rice, M.D., F.A.C.S., instructor in surgery, Minnesota University School of Medicine. 265 pages with 83 illustrations. F. A. Davis Company, Philadelphia, 1937. Price, \$4.50.

Since this is one of the earliest complete books on the subject it is met with a great deal of interest. The history of the method is of greatest interest to one little acquainted with this form of treatment. The anatomy, etiology, and diagnosis are covered with utmost conciseness. One entire chapter deals with the truss, its importance, how to fit one, and a complete description and pictures of all the various types. This chapter alone is well worth the price of the book. The method of injecting a hernia is com-

pletely covered and can only be grasped by a careful reading of the book. Solutions of various makes are evaluated and given impartial consideration.

It is known that this method of treatment is not accepted by the Council on Pharmacy and Chemistry of the American Medical Association, nor are any of the solutions used acceptable. However, neither is it condemned. Further experimentation and study by reliable groups is requested. In the light of this it is pertinent to compare the statistics on final results as given by Rice with those of Bradley L. Coley, M.D., of the outpatient department of the Hospital for Ruptured and Crippled in New York City. He reports failure in 81.03 per cent, with probable cure in only 3.44 per cent; Rice, on the other hand, reports 97.6 per cent cure in 379 cases with outright failure in only eleven cases. Confronted by such widely divergent figures, one naturally questions the method. Proper understanding can be obtained only by completely reviewing the literature on the subject. This volume, written by an outstanding authority on the subject, should prove invaluable to the practitioner interested in the subject.

C. H. J.

EXTERNAL DISEASES OF THE EYE

By Donald T. Atkinson, M.D., consulting ophthalmologist to the Santa Rosa Infirmary, San Antonio, Texas. Second edition, illustrated with 494 engravings. Lea and Febiger, Philadelphia, 1937. Price, \$8.00.

This book deals with the diseases of the lids and their appendages and the anterior segment of the eye. The introduction consists of a resumé of external eye diseases and their treatment in retrospect, through antiquity to the present time.

As a whole this book cannot be considered a necessity for the library of either the ophthalmologist or general practitioner because it does not contain anything which cannot be gleaned from more general recent works on ophthalmology. Moreover, it is not complete in the field it proposes to cover; such conditions as meibomianitis, congenital webs of the lacrimal apparatus, and the conjunctivitis associated with trichiniasis, are not mentioned.

The best chapter in the book is that devoted to dermatologic conditions of the lids and the approved therapy.

C. C. J.

TREATMENT BY DIET

By Clifford J. Barborka, M.D., department of medicine, Northwestern University Medical School. Illustrated, third edition revised. Lea and Febiger, Philadelphia and London, 1937. Price, \$5.00.

This is an excellent presentation of a "concise, practical and systematic method of prescribing diets and applying treatment by diet to health and dis-

ease." Theoretical discussions and unnecessary details are omitted for the sake of brevity and clarity. This, the third edition, is similar to the preceding editions in the general plan. "Discussion of the present status of the clinical aspects of the vitamins has been added; the present conception of the use of protamine zinc insulin is given; and the discussion of obesity has been broadened."

A small part of the text is devoted to the presentation of the essentials of diet in health, but the far greater part has been given to the diseases in which diet plays an important rôle. Each disease in which diet is of importance is considered separately and is preceded by a short resumé of the clinical features and physiologic principles upon which the dietary treatment is based. The diets are practical and the suggested food allowances for one day are not menus but are skeleton outlines which simplify the planning of the menus and allow for a variation of food from day to day. Where changes in diet need to be made from time to time as in the start and management of diabetes, peptic ulcer, nephritis, etc., the author has ably presented the necessary modifications.

An extensive bibliography is also given.

M. J. R.

CLINICAL URINALYSIS AND ITS INTERPRETATION

By Robert A. Kilduffe, M.D., director of laboratories, Atlantic City Hospital. With 40 illustrations. F. A. Davis Company, Philadelphia, 1937. Price, \$4.00.

"The primary purpose of this book is to present in a relatively concise form the subject of urinalysis from the standpoint of the physician * * * and has been designed to serve the clinician rather than the laboratory worker alone."

The book is arranged in three parts, the first of which deals with the kidney and its function. The second deals with the study of urinalysis and the third with miscellaneous items, including equipment, formulas, tables, etc. In the arrangement of the individual chapters the normal ranges, as well as the variation and significance of the variations, are discussed. There are particularly interesting chapters on the collections of specimens, on drugs and the toxicologic methods for their detection, the findings in diseases of the kidney, and an adequate discussion of renal function and pregnancy tests are presented. The anatomic discussion is rather long and somewhat elementary. The physiology on the other hand is very brief. All in all the book should be a welcome addition to the libraries of hospital laboratories and those interested in the training of technicians. I do feel that there is one criticism concerning the usefulness of the book for every practitioner and that is the multiplicity of examinations which are listed.

D. K.

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

FEBRUARY, 1938

Number 2

POLYCYTHEMIA AND HYPERTENSION*

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Division of Medicine,
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POLYCYTHEMIA

The case which I wish to discuss, the record of which was given to me for presentation through the kindness of Dr. Harrington, is that of a woman, sixty years of age, who first consulted Dr. Harrington in March, 1937, because of progressive enlargement of the abdomen for the past month. Twenty-five years previously she had suffered from hemorrhages from the mucous membrane of the nose and mouth. In 1929 she began to have dyspepsia, characterized by attacks of abdominal pain and by burning distress in the epigastrium occurring immediately after meals and lasting for two or three hours. The patient related that in the past year she had lost from fifteen to twenty pounds (6.8 to 9.0 kilograms) and gradually had lost in strength and endurance. On examination, in the left upper part of the abdomen there was a large mass which appeared to be the spleen and an enlarged liver. There was unusual redness of the mucosa and conjunctiva but no other significant physical findings. On laboratory study the findings were astonishing. The concentration of hemoglobin was 125; erythrocytes numbered 12,000,000 and leukocytes 53,000 per cubic centimeter of blood. Roentgenologic examination of the gallbladder revealed the presence of a large calculus. Roentgenologic examination of the stomach gave negative results except for displacement by a tumor. A diagnosis of polycythemia was made. By venipuncture, 1,000 cubic centimeters of blood were withdrawn by Dr. Harrington and treatment with phenylhydrazine was begun. Fourteen days later the erythrocytes numbered 6,700,000 and the leukocytes 74,800.

There are two kinds of polycythemia: that which is known as "polycythemia vera" and that

which is known as "secondary polycythemia." The latter is the condition which is characterized by a moderate increase in the number of erythrocytes in each cubic millimeter of blood and in the percentage of cells in the whole blood (hematocrit). A condition of this sort may result from any cause which produces insufficient aeration of the blood. Pulmonary fibrosis, heart disease, and low concentration of oxygen in the air, such as that which occurs in high altitudes, may have this effect on the blood. In this condition the erythrocyte count rarely exceeds 6,000,000 per cubic millimeter of blood and the blood volume ordinarily is increased little, if any. Polycythemia vera is a condition of uncertain etiology although there is some evidence that it is accompanied by abnormal physiologic activity of the stomach. Thus, it is possible that an excess secretion of the stomach produces polycythemia just as a deficiency of some substance (intrinsic factor) produces pernicious anemia. Some investigators believe that removal of the gastric secretion in polycythemia vera leads to return of the blood to a normal or to a nearly normal state.

Diagnosis: The diagnosis of polycythemia vera will be made more frequently if one has a suspicion that the condition exists. Whenever a physician sees a patient whose face is red, whose mucous membranes are reddened and cyanotic, and whose conjunctivae are reddened, he should suspect polycythemia vera. Unfortunately, one cannot put too much reliance on laboratory reports of the number of erythrocytes in each cubic millimeter of blood when polycythemia vera exists. This is in part because many technicians have not been trained to recognize a condition in which there is an abnormally large number of erythrocytes in each unit of blood, and partly because the number of cells is so great that it is difficult to count them accurately. It is well for the technician to dilute the blood twice as much as is usual in order to get a reliable count. The characteristic laboratory findings in polycythemia vera, in addition to the increased number of erythrocytes in each unit of

* Presented before the Eighty-sixth Annual Session, Iowa State Medical Society, Sioux City, May 12, 13 and 14, 1937.

blood, are the increased percentage of erythrocytes in the whole blood (hematocrit), an increase in the total volume of circulating blood and an increase in viscosity of the blood. Frequently, also, the leukocyte count is abnormally high. In some cases, even if the polycythemia is adequately treated, definite signs of immaturity of the white cells develop, so that the terminal phase may be that of chronic myelogenous leukemia.

The symptoms of polycythemia vera are not characteristic and frequently are multiple. Occasionally they are those of psychoneurosis. Patients may complain of vague distress in the head and of dizziness and confusion. Many of them complain of exhaustion, diminution of sexual vigor and unusual intolerance to warmth. These observations lead to the conclusion that whenever the appearance of the patient suggests polycythemia, investigation should be carried out to determine whether or not this condition is present. Enlargement of the spleen is, of course, additional evidence of the presence of polycythemia. The question may be asked, "What harm does polycythemia do in addition to producing unpleasant symptoms?" Vascular complications occur commonly in polycythemia vera. These may be in the form of myocardial infarctions, cerebrovascular accidents, phlebitis and occlusion of the arteries of the extremities or of the abdomen. The danger of these complications alone justifies the treatment of polycythemia vera.

Treatment: There are several methods of treatment of polycythemia vera. Roentgen irradiation of the extremities has had some vogue. Also, some investigators feel that arsenic is beneficial in this condition. At the clinic we have found that the treatment with phenylhydrazine hydrochloride is the most satisfactory.⁵ Our plan now is to reduce the number of erythrocytes in each unit of blood to normal, or nearly normal, by repeated venipuncture and withdrawal of as much as 500 to 750 cubic centimeters every day or so. Some difficulty may be encountered in performing venipuncture because the blood is thick and flows with great difficulty. The needle frequently becomes stopped up. In some instances it may be necessary to cut down on a vein and insert a needle of large gauge into it.

The amount of phenylhydrazine hydrochloride which is used to keep the blood count within normal limits after venipuncture has been performed varies somewhat, but ordinarily from 0.2 to 0.4 of a gram, given one day out of each week, is adequate. It is important, of course, that the phenylhydrazine should be fresh and physiologically active. One of the situations which upsets patient and physician greatly during treatment

with phenylhydrazine hydrochloride is the difficulty in determining the exact dose needed to maintain the blood count at about normal. Commonly the number of erythrocytes may increase so that the patient takes rather large amounts of phenylhydrazine for a short time, and anemia results; then the patient discontinues the use of phenylhydrazine and the polycythemic state returns. To avoid this irregularity it is best to change the dose of phenylhydrazine very slightly. If the polycythemic state increases when the patient is under treatment with phenylhydrazine, it is best to return the blood to its normal state by venipuncture and to increase the dose of phenylhydrazine about 0.1 of a gram each week. If anemia results, it is best to diminish the amount of phenylhydrazine, but not to stop administration of it abruptly.

One may ask if the administration of phenylhydrazine over long periods is not harmful. The best evidence we have at present indicates that prolonged treatment is not harmful. Careful experimental work on animals has shown that phenylhydrazine may be given in rather large doses and over long periods without producing any effects other than destruction of the erythrocytes. Careful clinical studies have led to the same conclusion. It also has been observed that some patients treated with phenylhydrazine over long periods eventually are able to get along in a fairly normal manner without phenylhydrazine.

HYPERTENSION

Classification and Diagnosis: Hypertension may be classified into two groups (see Table I). In a large majority of the cases the hypertension is of the type designated "primary" or "essential"; that is, the increase in blood pressure cannot be attributed to any known disease. Secondary hypertension is that due to known causes, such as coarctation of the aorta, which is usually characterized by an increase in the blood pressure in the upper extremities and by a normal or slightly increased blood pressure in the lower extremities. Rarely, marked hypertension is present in the legs as well as in the arms. In addition, the examiner frequently may feel pulsating arteries about the thorax, particularly in the interscapular region, which are enlarged collateral arteries. Murmurs may be heard in these locations. Pulsations in the arteries of the lower extremities are ordinarily reduced or absent and the pulse wave if present in the femoral artery follows that in the radial artery instead of preceding it, as is ordinarily the case. There may be roentgenologic evidence of erosion of the ribs by enlarged collateral arteries and the aortic "knuckle" may not

be visualized roentgenologically. Hypertension associated with tumors of the medulla of the suprarenal glands is almost always paroxysmal in type.

The blood pressure suddenly attains high levels and then more or less rapidly returns to the normal level. Hypertension associated with tumors of the suprarenal cortex is not paroxysmal in type; obesity, hirsutism, deep voice, and menstrual disturbances may be noted among affected women. In some cases, tumors in the region of the suprarenal glands or the kidney may be palpated; these tumors occasionally may be seen in roentgenograms and a roentgenogram which has been made following the injection or excretion of radiopaque material into the pelvis of the kidney at times may reveal displacement of the kidney. Injection of air around the kidney may help to visualize the suprarenal glands roentgenologically. Tumors of the cortex and medulla of the suprarenal glands are rare. In hyperthyroidism, in addition to the hypertension, which is ordinarily of a mild degree, there are symptoms, such as nervousness, loss of weight, intolerance to heat, weakness of the quadriceps muscles, and on palpation the examiner finds an abnormality of the thyroid gland. The systolic blood pressure is usually elevated more than is the diastolic blood pressure; this causes an increase in the pulse pressure. The basal metabolism is increased. Many patients who have severe essential hypertension have increased metabolic rates, but the rates rarely exceed +20 to +25 per cent, and unless a goiter is present coincidentally, palpation of the thyroid gland will reveal that it is normal. Aortic insufficiency is apparent on examination.

The systolic blood pressure is increased and the diastolic pressure is decreased. In the early stage, it is easy to distinguish essential hypertension from hypertension that is secondary to glomerular nephritis, because an unusual amount of albumin, and number of erythrocytes and casts are found in the urine in the latter condition. In the later stages of the two diseases, distinction may be difficult, although examination of the retinae by an experienced ophthalmologist is of value. In essential hypertension the value for the blood pressure is higher, the injury of the myocardium is greater, and palpation of the peripheral arteries and biopsy of the arterioles in muscle reveal more hypertrophy than in hypertension that is secondary to glomerular nephritis. When reliable histories are available, the hypertension is ordinarily found to be of greater duration in essential hypertension. In glomerular nephritis, there

is almost always a history of edema. Hypertension resulting from arteriosclerosis is almost always mild or moderate in degree and represents a physiologic response. This type of hypertension may be observed among elderly individuals who have generalized arteriosclerosis. Essential hypertension results from an inherited tendency upon which are superimposed the stresses of life.

TABLE I

CLASSIFICATION OF HYPERTENSION

1. Primary or essential hypertension; estimated 85 per cent of all cases.
 - Group 1. Slight to moderate increase in blood pressure, which ordinarily becomes normal as a result of rest. Mild sclerosis of retinal arteries.
 - Group 2. Moderate to severe hypertension. Moderate sclerosis of retinal arteries. Occasionally venous thrombosis and arteriosclerotic retinitis.
 - Group 3. Moderate to severe hypertension. Angiospastic retinitis.
 - Group 4. Severe hypertension. Angiospastic retinitis. Edema of optic disks.
2. Secondary hypertension due to known disease; estimated 15 per cent of all cases.
 - a. Coarctation of the aorta.
 - b. Glomerular nephritis and pyelonephritis.
 - c. Tumors of suprarenal glands.
 - d. Hyperthyroidism.
 - e. Arteriosclerosis.†
 - f. Aortic insufficiency.

Medical treatment: Medical treatment of essential hypertension, Group 1, is usually satisfactory. Hypertension, Group 4,‡ does not respond satisfactorily to medical treatment, but the patients must be cared for. Some patients who have hypertension, Group 2 or Group 3, respond rather well to medical treatment and some do not. When medical treatment is advisable, it is best carried out along the following lines. The treatment should be begun with a period of several days of rest in bed, during which the blood pressure should be determined several times a day. The results of these determinations, which should be charted on a sheet of paper, frequently will show a decrease in the blood pressure and convince the patient of the value of rest. Subsequently, the values for the blood pressure should not be determined at frequent intervals and the patient should not be told that the prognosis is unfavorable. It is unwise to speak of cure of hypertension, for once the patient believes cure is possible, he is rarely satisfied with less. The physician can speak more advantageously of reducing the blood pressure or of controlling the hypertension. If the patient is obese, his weight should be reduced; if the patient is not obese, a general diet

† It is not uniformly agreed that arteriosclerosis may cause hypertension.

‡ It is emphasized that such a designation does not indicate the "degree" or "grade" of hypertension. Cases of essential hypertension fall into one of four groups which indicate more than the height or degree of hypertension alone (Table I).

may be employed. Were there available a non-toxic adequate vasodilator, the problem of the treatment of many patients who have essential hypertension would be rather satisfactorily solved. Unfortunately, no such substance is available. The nitrites and cholines have in common a vasodilating action which is too short or too slight to be very valuable. Careful studies have shown that the administration of bismuth subnitrate by mouth has little or no effect on blood pressure. At the present time, there is no clear evidence that hormones obtained from the ovaries are of any value in the treatment of this condition. Restriction of sodium chloride and protein are not now considered to be effective in most cases of essential hypertension by most students of this subject. There is evidence that potassium sulphocyanate or sodium sulphocyanate may be effective, but the dosage must be carefully regulated.^{7 and 8} The adequacy of treatment can be determined only by studies of the amount of cyanates in the blood, which should be maintained between six and ten milligrams per 100 cubic centimeters of blood. The determination of the cyanates in the blood is no more difficult than the determination of sugar in the blood. Such toxic manifestations as fatigue, weakness, mental confusion, disorientation or nausea may occur, but if the amount of cyanates in each 100 cubic centimeters of blood does not exceed twenty milligrams there are no dangerous complications of this type of treatment. Colloid goiter, anemia and dermatitis may occur. A good plan is to administer five grains (0.3 of a gram) of one of these drugs by mouth daily for one week. The dosage should then be reduced to five grains (0.3 of a gram) two or three times a week. If there is reduction of 25 to 35 millimeters of mercury in the systolic blood pressure, this dosage may be maintained. If there is no satisfactory reduction in blood pressure, the amount of the drug is slowly increased until five grains (0.3 of a gram) are given ten to fourteen times a week, unless toxic symptoms occur or unless the value for the cyanates in the blood exceeds ten milligrams per 100 cubic centimeters. The most desirable plan is to give the least amount of the drug which will produce the maximal reduction of blood pressure without provoking signs of toxicity. This amount is extremely variable for different patients.

Rest is important, and the prescription of rest requires fine judgment. Apprehension and semi-invalidism can be caused by a regimen which is too strict. Ordinarily, patients should rest or

sleep nine to ten hours each night, should lie down in a quiet darkened room for an hour or more at mid-day, and when possible, should rest in a quiet, peaceful environment during the week end. Regular vacations are important. The lives of all individuals are occupied with nonessentials. The physician should weigh the pleasure these activities give against the benefit to be derived from their elimination. Civic and club activities may be strenuous enough to make cessation of them desirable. The environment should be arranged to eliminate stresses and strains. The sedatives, particularly the barbiturates, are the most valuable drugs. Under controlled conditions it can be demonstrated that administration of large amounts of sedatives will cause the blood pressure to return to normal in many cases of hypertension. The amount of a sedative drug to be given three or four times a day should be great enough to abolish nervousness and restlessness and small enough to avoid drowsiness and excessively slowed mental reactions. The physician who sees many cases of essential hypertension will be impressed by the fact that many of the patients do not respond adequately to medical treatment. It is for some of this group of patients that surgical treatment may be tried. It is important to remember that operation is ordinarily of little value when hypertension is far advanced. Therefore, surgery must be carried out relatively early in the course of the disease while blood pressure is still flexible.

Surgical treatment: In suitable instances in which the medical treatment of essential hypertension is unsatisfactory, surgical treatment may be tried.^{1, 2, 3 and 4} Various types of sympathectomy have been used. The most satisfactory is the bilateral, subdiaphragmatic, extraperitoneal resection of the splanchnic nerves, celiac ganglions and upper two lumbar sympathetic ganglions. The purposes of the operation are: first, to decrease the resistance of the flow of blood through a large vascular area situated intra-abdominally and in that part of the body distal to a rough level between the umbilicus and symphysis pubis; second, to decrease liberation of adrenalin from the suprarenal glands; and third, to increase the blood flow through the kidneys.

Age greater than fifty years, congestive heart failure, marked renal insufficiency, advanced arteriosclerosis and angina pectoris are contraindications. Spasm and apparent sclerosis of the retinal arteries, retinitis, moderate enlargement of the heart, inversion of the T waves in the

electrocardiogram, albuminuria and slight reduction in renal function and a cerebrovascular accident from which recovery has been satisfactory, are not in themselves contraindications to operation. Operation is advisable only for patients whose blood pressure decreases to normal or to nearly normal limits as a result of:

1. Intermittent intravenous injection of a five per cent solution of sodium ethyl-methyl butyl thiobarbituric acid (pentothal sodium) at the rate of about one cubic centimeter per minute until about fifteen cubic centimeters have been given or until the decrease in blood pressure is maximal.⁶

2. Administration of three grains (0.2 of a gram) of sodium amytal hourly until three doses have been given.

3. Administration of one-half of a grain (0.032 of a gram) of sodium nitrite every half hour until six doses have been given.

4. Rest and sleep.

The mortality from the operation is extremely low and in a majority of cases there is a significant reduction in blood pressure for as long as twenty-six months. Extensive sympathectomy for hypertension has been performed too recently to permit one to determine whether the beneficial effects on blood pressure are permanent. When the blood pressure is satisfactorily reduced by operation, retinitis may disappear, spasm and apparent sclerosis of the retinal arteries may be diminished, the transverse diameter of the heart may decrease, T waves which originally were inverted in the electrocardiogram may become upright, and albuminuria may disappear. Even when the effects of operation on the blood pressure are not satisfactory, there may be marked relief of such symptoms as headache, pain in the left half of the thorax, fatigue and nervousness.

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IMPACTED URETHRAL CALCULI COMPLICATING PROSTATISM

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Impacted urethral calculi are not commonly encountered in the practice of urology, although we frequently see patients with renal or vesical calculi which cause mild symptoms during their passage through the urethra or require a minimum of manipulation to extract through the anterior urethra. Before presenting an interesting case of impacted urethral calculi a brief discussion of this type of pathology might be of advantage.

Classically, urethral stones are divided into the migratory and autochthonous types. Those in the first group originate in the bladder or kidneys while the latter are primary in the urethra. Stones in the autochthonous group are relatively rare and are associated with an acquired or congenital deformity along the lumen of the urethra which interferes with the normal urinary current. They are probably most common in the cavities left in the posterior urethra following prostatectomies and Corbineau¹ noted 103 such cases reported in the literature up to 1932. Congenital diverticula, urinary sinuses, pouches that form behind strictures, trauma and foreign bodies are some of the pathologic conditions which may be instrumental in such stone formation. Infection is practically always associated with these stones and their composition is uniformly of phosphates.

Migratory stones may become impacted in both pathologic or normal urethra and, of course, the majority lodge in the posterior urethra. They usually occur singly although multiple calculi have been reported. At times migratory stones become trapped in urethral diverticula, but the pocket is more often formed from pressure. Although autochthonous calculi have, in a few isolated instances, been reported in urethral diverticula of females, migratory calculi impacted in the urethra practically always occur in males. It is interesting to note that impaction of migratory calculi is a condition rarely associated with enlargement of the prostate gland. This can be explained by the fact that when enlargement of the prostate gland once occurs, a shelf or bar is formed which prevents engagement of the stone in the internal urethral orifice.

In the past, treatment of stones impacted deeply in the posterior urethra has been by the perineal or suprapubic surgical approach. The case discussed in the following paragraphs was treated successfully by making use of some of the ingenious instruments developed for transurethral prostatic resection. Doubtless others have used

a similar procedure in handling cases of this sort, but as yet, none has been reported in the literature.

CASE REPORT

Mr. S., a farmer, eighty-four years of age, had noted some urinary difficulty of varying degree for the past ten to fifteen years. The difficulty was mildly increased in cold weather but never marked enough to require a doctor's care. Nocturia reached two to three times during the months preceding the onset of his present illness. On June 19, 1935, this patient suddenly had marked difficulty in passing his urine and only by severe straining could he get even a few drops to pass. The family physician was called and after failing to pass the usual types of rubber catheters, he was able to get past the obstruction with a bi-coudé silk and wax catheter of small size. One thousand cubic centimeters of clear urine were drained from the distended bladder. His doctor made the diagnosis of impacted stone at this time, since he could feel the grating sensation against the catheter when it passed through the posterior urethra.

On admission to the hospital, the patient was ambulatory and apparently a well preserved man for his age. Physical examination was essentially negative except for the usual findings of advanced age. Rectal palpation disclosed an enlarged prostate gland with a consistency suspicious of cancer, although there was none of that stony hardness that makes a diagnosis of malignancy a certainty. No stones could be palpated through the glandular substance. Laboratory findings showed the blood chemistry and renal function to be within normal limits. A plain kidney, ureter and bladder film taken with a small catheter in place showed two shadows in the region of the bladder neck that were deflecting the catheter to the right as it entered the bladder. During the next few days larger and larger olive-tipped catheters were left indwelling until a #24 was reached, at which time more x-ray pictures were taken. A sodium iodide cystogram added little information, but an air cystogram disclosed a moderate sized intravesical prostatic filling defect and the stones could now be definitely located in the posterior urethra. Leaving the air in the bladder, a lipiodol urethrogram was done and this double-contrast film (Fig. 1) supplied the necessary information.

On June 26, 1935, under spinal anesthesia, sounds were easily passed and then with a little gentle manipulation the #28 McCarthy sheath for the electrotome slipped past the stones without trauma. Examination visually disclosed a pouch well down toward the external sphincter, with

its opening at the five o'clock position. This opening was covered with edematous tags of mucosa and it was only when these tags were swept aside by the current of water that one could see the broad back of a dark-colored stone

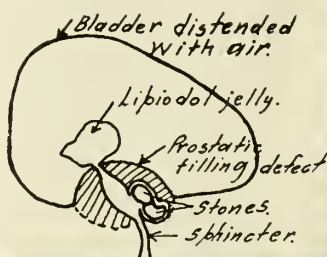


Fig. 1. Double-contrast film showing air in bladder and lipiodol emulsion in urethra. Diagram in upper left hand corner demonstrates the pathology.

embedded within. The prostatic obstruction was not marked, the median lobe being about 1+ enlarged (using the 1, 2, 3 and 4+ gradings for enlargement) while the lateral lobes were somewhat larger.

Dislodgment of the stones by means of digital pressure through the rectum was attempted, but this effort met with failure. The prostate gland was then resected until the pocket was partially cut away and the stones fairly well exposed. We used a heavy loop on the electrotome and the upper stone was turned slightly until a sharper border was exposed. With the McCarthy hemostatic forceps (commonly used for picking resected tissue from the bladder) the proximal calculus was finally grasped, lifted out and deposited in the bladder. The second stone was handled in the same manner. The larger calculus was approximately 1.5 centimeters in diameter while the second was slightly smaller. The walls of

the pouch were then trimmed down by further resection and eventually a good revision of the posterior urethra and bladder neck was obtained. The patient went through the procedure with minimal reaction and one week later a lithotrite was inserted under a small spinal anesthesia and the stones readily crushed and washed out. Both had a nucleus of uric acid and so were definitely not of autochthonous classification.



Fig. 2. Double-contrast progress film taken one week after removal of stones.

Figure 2 is a progress film made one week after the stones were removed and demonstrates an adequate opening at the internal urethral orifice.

SUMMARY

1. An interesting case of impacted calculi in the posterior urethra is herewith presented.

2. Impacted calculi in the posterior urethra, in some instances, may readily be removed by using some of the ingenious instruments devised for transurethral prostatic resections.

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EXPANDING THE SCOPE OF TRANS-URETHRAL PROSTATIC RESECTION BY MEANS OF A TWO-STAGE OPERATION

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As the progress in prostatectomy evolves, we are faced with a sequency of rather rapidly changing problems, the solution of one of which merely carries us on to the consideration of the next. The relative merit of the perineal procedure in comparison to the more generally employed suprapubic operation was still an open question when the transurethral method came into vogue. The applicability of this approach to the relief of median bar and small median lobe obstructions was recognized early and widely. From such well established ground the transurethral operation has been expanded to include an attack upon varied types and extents of prostatic enlargements.

The question before the prostatectomist today is that of determining the exact extent to which the transurethral procedure should be employed. There is no unanimity of opinion among urologists as to how far the scope of the transurethral operation should be extended. All urologic surgeons select certain cases for transurethral resection, and most of them reserve certain other cases for a perineal or, more frequently, a suprapubic operation. In this, as in every controversial field, there are borderline cases. What constitutes a borderline case for transurethral resection? The problem revolves around two considerations: one is the size of the prostate gland, the other is the nature of the tissue which makes up the enlargement.

Benign prostatic enlargements are in the nature of adenofibromatous hyperplasias, and tissue removed at resection is usually so reported by the pathologist. Such a description, however, does not tell the whole story from the surgical standpoint. Prostate glands removed in toto at autopsy or at open operation give us a much more accurate comprehension of the problem than does

the accumulation of small pieces of tissue which have been removed at a resection. The ratio of adenomatous to fibrous tissue in the enlarged prostate gland is of no small importance to the resectionist. A prostate gland consisting largely of fibrous hypertrophy is structurally firm. Although fairly large per rectum, the obstruction to the urinary flow caused by such a gland may be relieved by the removal of a relatively small amount of tissue, the remaining tissue being sufficiently rigid to maintain the opening which has been produced by the operation. It is in this type of prostate gland that the so-called "channel" operation was successful. In such a fibrous prostatic hypertrophy, the operative procedure is brief and easily accomplished, and the resulting relief from obstruction is dramatic. A recently performed operation serves as an illustration. The patient had a complete urinary retention. On rectal examination his prostate gland was found to be moderately enlarged and so firm that it was thought to be malignant. At operation the removal of a few grams of tissue sufficed to open his bladder neck widely. Postoperatively he was free from residual urine, and when asked how he was voiding, he replied, "As a man should."

There are all combinations of adenomatous and fibrous tissue in enlarged prostate glands. Those that are composed largely of adenomatous tissue constitute a problem for the resectionist. In order to relieve the urinary obstruction in such glands, large amounts of tissue must be removed and at times almost a subtotal prostatectomy must be performed transurethraly to relieve the patient of his urinary difficulty. Such glands are elastic and, as rapidly as the intra-urethral protrusions are removed, more tissue presents itself into the field of operation. In order to overcome the tendency to obstruction and give the patient a good result, a wide prostatic resection must be performed with the removal of much tissue. Equally difficult of transurethral resection are the soft prostate glands which seem structurally inadequate to maintain the passage that has been made through them. After an opening has been cut through such a gland, the prostatic tissue seems to collapse and fill in the potential space which has been made for the urinary outflow. The cutting of a channel through such a gland is inadequate, and the only way to deal successfully with it is to remove a large portion of the gland. Here one again approaches almost a subtotal prostatectomy transurethraly in order to obtain a satisfactory result for the patient.

In discussing the surgical variations in enlarged prostate glands, no mention is made of malignant glands, since they are a problem by themselves. I

here wish to differentiate the various types of benign prostatic enlargements and point out that while the majority are easily relieved by the removal of a small portion of the tissue present, others require the removal of most of the enlarged gland in order to obtain a good result. Not only does the type of prostatic tissue at times make for a difficult case for transurethral resection, but so also does the size of the gland. If there are large intra-urethral lobes, much tissue must be resected in order to open the bladder neck. If there are large extensions of the prostate gland into the bladder, that viscus may at times be almost filled by the gland, and resection of all of the protruding gland is required to effect a cure. Such are the types of prostatic enlargements which may make for difficult transurethral resections and constitute the borderline cases which many urologists have felt were better treated by the older methods of operation.

The advantage to the patient of the transurethral operation lies in the relative absence of surgical shock and in the low mortality of the procedure. Most of the men who suffer from prostatic enlargements are in the afternoon of life and the urinary difficulties of their advancing years should be relieved by the method which will most quickly return them to the enjoyment of health. The fact that the transurethral approach is the preferred method in operating on median bar obstructions and on small median lobe prostatic hypertrophies is due to the ease with which the patient tolerates the procedure. It would be ideal if this advantage could be preserved to patients harboring prostatic obstructions the relief of which requires the removal of larger amounts of tissue. It is the purpose of this presentation to invite attention to the fact that, by dividing the operation into two easy stages, large and unusual prostatic obstructions can be very satisfactorily removed by transurethral procedures well tolerated by the patients.

Much investigative work has been done on the causative factors in surgical shock, but for a working basis it is well to assume that surgical shock is in proportion to the amount of hemorrhage. By resecting the very large prostate glands in two easy stages, the operative procedure is restricted so as to avoid significant blood loss at one time even in the most vascular glands. The length of the anesthetic is also a factor in the postoperative condition of the patient. It has been our custom to give a small spinal anesthetic in the lowest accessible segment. Such an anesthetic may not prevent the patient from moving his extremities, but it will give him complete anesthesia in the region of his prostatic bed for a length of time sufficient to resect the ordinary obstruction. Should an un-

usually large prostate gland be encountered, it is advisable not to supplement the anesthetic in order to continue the operation, but rather to postpone the remainder of the resection and return the patient to his room. By so doing the operative procedure is so restricted that it can be well tolerated by even an aged and infirm patient.

A graded procedure is very applicable to a transurethral prostatectomy, because one can stop resecting at any time regardless of how much of the operation has been completed. At any time it can be decided to postpone the remainder of the resection, and, after the bleeding points have been coagulated with the electrode, a catheter can be inserted in the bladder and the patient returned to his bed. By judiciously availing oneself of this modification of the routine procedure, the condition of the patient can be maintained and all the advantages of the transurethral approach can be extended to the patient harboring a huge prostatic obstruction. By the use of a two-stage operation, the scope of the transurethral resection can be expanded to include the most extensive and difficult prostatic enlargements and large amounts of tissue can be resected without diminishing the advantages of the procedure to the patient.

CASE REPORT

Mr. M. K., seventy-one years of age, had been suffering from increasing difficulty with urination for over five years. Eight days before being referred for operation, he had progressed to a complete urinary retention and had been catheterized several times each day by his attending physician. On examination he was found to have a hugely enlarged gland per rectum. When an indwelling catheter was inserted, it was necessary to pass all but the distal inch of the catheter into the urethra in order to drain the bladder, which suggested that we were dealing with a prostate gland of unusual size that protruded high into the bladder. On June 22, 1937, he was given a small low spinal anesthetic. A resectoscope was passed, and it was discovered that the prostatic tissue protruded so far into the bladder that it was not possible to reach the end of the gland on the right side with the instrument. At that time it seemed that the sheer size of the gland might necessitate a suprapubic enucleation. By passing the instrument to the limit of its depth, it became possible to reach the end of the intravesical protrusion on the left side. After the left lateral lobe had been resected, the intravesical extension of the right lobe pressed across the midline and, becoming available to the instrument, was resected. After the intravesical protrusions had been removed, it was decided to leave the intra-urethral enlargements to a second

stage. The bleeding was controlled by use of the electrode and a catheter put into the bladder. The patient left the operating room feeling comfortable and without change in blood pressure or pulse rate. The next day he was permitted to be out of bed. He was able to take adequate fluids and an unrestricted diet.

Five days after the first stage of the operation, he was returned to the operating room and the intra-urethral enlargements of the lateral lobes of the prostate gland, which were also unusually large, were resected. The instrument used was a direct vision Thompson resectoscope, the tissue being cut with a tubular knife within the sheath and the individual bleeding points being controlled with the tip of a coagulating electrode, thus producing the minimum of burning in the postoperative prostatic bed. The patient was again returned to his room in excellent condition. On the first day after the second stage, he was again permitted to be out of bed. On the second day his catheter was removed and he voided well, the residual urine being twenty-five cubic centimeters. On the third day the residual urine was twenty cubic centimeters. The next day he emptied his bladder completely. On the fifth day after the second stage of his resection, he was allowed to leave the hospital. He felt well and has continued to void without difficulty.

This case is presented to emphasize the fact that a two-stage transurethral resection is the operation of choice when large amounts of prostatic tissue must be removed. Dividing the procedure into two sessions preserves for the patient with the large prostate gland all the advantages of the transurethral operation. This was evidenced in the case reported by the fact that the man was out of bed on the day following each operative session. The two stages can be done close together. In this case the second stage was carried out five days after the first, and the patient left the hospital five days after the second stage, thus making the hospital stay brief. Operating on such a large and unusual prostate gland by a two-stage resection rather than by a suprapubic prostatectomy has obvious advantages in the direction of low surgical risk, absence of shock, brief hospitalization, and a quick return of the patient to his routine activities, as well as a gratifying relief from the obstruction to his urinary outflow.

The transurethral resection lends itself very readily to a division into stages. In many extensive operations, once the surgeon is committed to the procedure, he cannot call a halt until all the necessary work has been completed. This is not so with a transurethral resection. At any time during the operation, a catheter may be inserted in

the bladder for drainage and the patient may be returned to his room. In operating on patients who are poor surgical risks, if symptoms appear which suggest that complications are impending, the operation may be terminated while the patient is in good condition, and the remainder of the resection may be postponed until a more favorable time. The transurethral operation has won its place in the small prostatic obstructions by virtue of its low mortality combined with gratifying results. In the handling of the large and the difficult glands, these same advantages may be preserved to the patient by a two-stage resection. By dividing the procedure into two easy stages a few days apart, the patient may be completely relieved of his huge prostatic obstruction with the least risk to his life, and he may be most speedily returned to his home and his work to enjoy relief from his urinary difficulties.

TYPHUS FEVER IN THE UNITED STATES

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Typhus fever undoubtedly existed in ancient times, but was not differentiated carefully from other similar epidemic diseases, especially typhoid and the plague. In the sixteenth century more careful descriptions of diseases were made and we begin to find cases whose descriptions conform quite well with our present conception of the disease. Differentiation from typhoid was made in 1837 by Gerhard and Pennock. Epidemics followed war, famine, overcrowding and unsanitary conditions. Medical historians tell us that the disease was introduced into the western hemisphere soon after the conquest of Mexico by Cortez.¹⁸ In the United States typhus gained entrance by two supposed routes; one via Mexico, its explorers and emigrants; the other by ships from foreign ports and European immigrants. Localized epidemics have occurred in New York, other Atlantic seaboard cities, and California, following upstream and merging into non-typhus areas as coastal trade fades out. Sporadic cases of mild typhus fever, known as Brill's disease, have occurred in New York and other American cities.

Cases of spotted exanthemata having a sudden onset with marked prostration and mild to severe mental symptoms, lasting two weeks with a high temperature of the diurnal variety, ending in crisis or rapid lysis, have been reported throughout the United States. Most of these cases have occurred in the southern part of the country and along the Mexican border. Considerable numbers of cases have been reported from New York and

other seaboard cities,⁹ and what appear to be sporadic cases have been reported from middle western cities, Indiana and in Detroit.^{2, 5 and 14}

Throughout the world these more or less clinically similar diseases took the name of the describer on the locality or conditions in which they were found; hence the names spotted fever, jail fever, ship fever, camp fever, typhus exanthematicus, Fleck Fieber, tabardillo, Brill's disease, fourteen day fever, Malayan fever, Kumaon fever, etc. The great similarity of the Japanese tsutsugamushi and Rocky Mountain spotted fever as well as their causative agent seems to point to the fact that their relationship is probably closer to typhus than has been heretofore imagined.^{8 and 19}

The Weil-Felix reaction with the Proteus,²² especially Proteus X19, in 1916 brought the relationship of the widespread clinically similar diseases into a closer grouping. Rickett's⁶ discovery of the bodies named after him has still further united these illnesses. In all of them the Weil-Felix reaction is positive by at least the end of the second week in a dilution of 1/100 in 75 to 80 per cent of the cases, and in a dilution of 1/80 in 90 to 95 per cent of the cases;²¹ further differentiation being made by the skin manifestations and the mildness or severity of the disease.

In 1896 Brill⁴ noticed a disease similar in type to typhoid but differing in many respects from typhoid. He described it at great length and remarked on its similarity to typhus. In 1910 he published another, more lengthy report. Anderson¹ and Goldberger in Mexico then proved its identity with typhus by cross immunity of animals with Brill's disease and tabardillo, which had been proved to be a variety of the European typhus. Mooser¹⁵ of the American Hospital in Mexico City proved that the typhus of the United States and Mexico were one and the same by male guinea pig inoculations. He described the swelling and infiltration of the tunica vaginalis, and remarked on the lack of cerebral nodules in these two varieties. On the other hand, the European variety showed many cerebral nodules and a lack of scrotal involvement in guinea pigs. He furthermore criticizes the custom of historians to jump at conclusions as follows:

"In the light of our investigations it looks then definitely as if tabardillo is an autochthonous variety of typhus of the American continent. Epidemics of considerable magnitude have been described by the early Spaniards and the circumstance that the Indians had their own name for the disease is also a strong indication that it was known to them as a specific disease before the arrival of the conquerors. The Indians of Michoacan called typhus 'cocolixtle meco' or 'spotted fe-

ver'; cocolixtle meaning painful fever and meco derived from Chichimecas, a tribe whose members painted their bodies with red stripes and spots. Torres relates that in some parts of the state of Michoacan it was not until recent years that the name cocolixtle meco began to be replaced in the language of the people by the Spanish word 'tifo.' The Aztecs called typhus 'Matlazahuatl.' Matlatl—net, and zahuatl—eruption, spots, which means spots arranged in the form of a net. Their hieroglyphes picture typhus in the form of a man covered with spots like a net, with nosebleed and holding the head strongly with both hands (headache). Cocotiztle they used to designate an epidemic. Cocotiztle Matlazahuatl meaning therefore an epidemic of typhus. That the disease was really endemic before the arrival of the Spaniards can also be seen by the circumstance that the early Spaniards took the name cocolixtle over from the Indians, and it was not until much later that they began to use their own names tabardillo and tifo. Diaz referring to the epidemic in 1573 wrote: 'Then the terrible cocolixtle broke out in the surroundings of the City of Mexico' (quoted from Torres)."

Neill in his guinea pig work with Brill's disease makes note of the cerebral nodules but fails to mention scrotal lesions, which he, being a careful observer, would hardly miss. This would seem to place Brill's disease as a mild endemic form of the European variety of typhus which, considering the source of much of New York's population and that of other Atlantic seaboard cities, is not surprising.

The mode of transmission of typhus has been a much debated question for the past three decades. Many observers at first suggested that the transmitting agent was the body louse. However, Maxcy¹³ was the first to make the statement, which drew much comment, that "the disease is not associated with lousiness." New York observers noted that the proportion of lice in the endemic disease was not above the normal run. Gardner Fletcher and Brown¹² observed an epidemic in a military garrison on the Rio Grande and saw no lice. Dyer, Rumreich and Badger⁸ proved in 1931 that rodents, especially the rat, provide the reservoir of endemic typhus. They also proved at the same time that the ticks *Dermacentor andersoni* and *variabilis* are the source of Rocky Mountain spotted fever and that the virus will survive at least two molts of the tick. Rat fleas have been proved to contain the virus of typhus in infected areas. In an epidemic of typhus near Sidney, Australia,¹⁰ there was a great scourge of rats and mice with thousands of the rodents dead and dying. In some European epi-

demics the body louse has been found to contain the virus, and evidence, while not conclusive, points to lice as a transmitting agent in these cases.

Typhus (in its inclusive meaning) in the United States has been present in two forms, epidemic^{15 and 20} and endemic.³ Endemic cases are milder and are caused by association with rodent reservoirs, showing no connection with any age, sex, or economic status; endemics occur in the summer and fall when the rodent population and their ever present fleas are most numerous. Epidemic typhus, on the other hand, occurs in overcrowded areas and in unsanitary conditions in the winter and spring; these cases are much more severe, nervous symptoms are much greater and the mortality rate is from two to four times greater. In epidemic cases the body louse, which is transferred directly from person to person, is the transmitting agent and the virus becomes more virulent for humans because of the frequent passage through them. In the endemic variety, the passage through humans via rodents and their fleas, is of a necessity less frequent, and hygienic conditions are much better.

Any discussion of typhus cannot be divorced from some discussion of Rocky Mountain spotted fever in which the prevalence is seasonal with the numbers and activity of the ticks. The eastern variety has been proved to be one and the same with the western variety by Dyer, Rumreich and Badger,^{7, 8, 19 and 20} the only difference being that the *Dermacentor variabilis* is the carrier in the east whereas the *Dermacentor andersoni* is the main carrier in the west. Rocky Mountain spotted fever differs from typhus mainly in the location of its lesions and not in the type of lesion. The location of the lesions corresponds roughly at the onset to the exposed areas, and involves commonly the soles and palms. Its virulence corresponds very well with that of epidemic typhus. In guinea pigs it produces scrotal lesions comparable with those of the tabardillo.¹⁵ Pathologically the lesions of all varieties of typhus and of Rocky Mountain spotted fever are essentially the same, being glial nodules with leukocytic infiltration in the cerebrum when present, and an endothelial proliferation, perivascular infiltration, thrombus formation in the small vessels of the skin, thus explaining the failure of the rash to disappear in diascopy in contrast to the true vasodilatation of typhoid. From the evidence offered and the observations made, it seems highly probable that typhus and Rocky Mountain spotted fever may be the same disease modified by its normal reservoirs in the two instances. Cross immunity^{1 and 21} is sometimes found for the two diseases, but usually is not. May not the variation acquired throughout the

years be great enough to cause this discrepancy? Vaccinia and smallpox are not the same disease, but cross immunity follows infection with one or the other. Recent evidence also points to the fact that pneumonia of one type does not confer immunity to other types, but that it generally does to another attack of the same type.

Treatment of typhus is at present purely symptomatic and supportive. Convalescence should never be hastened, a statement which might be made of any infectious disease. Endemic cases need not be isolated;¹ and ¹² nor epidemic cases either after a thorough delousing. Control of endemic cases^{1, 3} and ⁹ may be effected by controlling the rodent pests. Control of epidemics²⁰ may be accomplished by isolating patients until they have been deloused, and educating the population to more hygienic living conditions and cleaner personal habits. A vaccine⁷ has been prepared in Europe and in this country from typhus organisms, but protection is still questionable. A vaccine prepared by Zinsser from Rickettsiae taken from the peritoneal cavity of typhus infected rats is under trial in Mexico. A vaccine from typhus infected fleas has afforded questionable protection in certain cases in the United States.

Typhus fever in the United States has been reported over more territory since Brill made his discoveries, but it seems likely that this apparent increased frequency is due to the fact that clinicians are becoming more adept at recognizing the condition, rather than that the disease itself is more prevalent.

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LATER CONTRIBUTIONS TO TREATMENT OF FRACTURES

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Newton

The subject of fractures is an extensive one, and the methods of treatment are legion. From time immemorial man has sought to restore to normal use as best he could a broken bone in his fellowman. His methods have varied with the ages from leaving a broken and disfigured limb alone and at rest to painful stretching and the application of splints of various sorts. Restored function to a percentage of normal became the accepted result to ease the fracture surgeon's conscience when he presented his appreciative patient at some distant clinic, until every practitioner in the field felt he was doing well to restore a broken wrist to usefulness in the shape of a silver fork or a gardener's spade. Many a broken hip or thigh compensated their shortness with an extra layer or two of leather on the heel and sole of their shoe, to say nothing of the amputations for non-healing fractures at the junction of the lower and middle thirds of the leg.

Then comes the surgeon with his apparent unquenchable thirst for blood and a desire to use the hammer, anvil, saw and screw drivers, and years of plating took place according to Lane. The results in the cases reported were marvelous, but the patient with the poor results always stayed home to be a wall flower in some doctor's office. Later Kirschner with his wire, Steinman with his pin, and Bohler with his iron walking stirrup seemed to transform the subject of fractures from a chamber of horrors into a land filled with fairy tales. We turn to a catalogue of fracture appliances and discover that one thousand dollars would barely equip an office. For the humerus alone we can buy anything from an aeroplane splint to a Hoke plaster traction apparatus. However, there are eminent teachers and masters who still cling to the adjustable splint. On the west coast Roger Anderson advocates skeletal and

countertraction by means of the Steinman pin and Kirschner wire, while Callander of San Francisco still uses Russell traction for fractures of the femur. Griswold would use mechanical reduction by means of Kirschner wires for irreducible fractures of the forearm, whereas most men would put the patient to bed on his back from three to six weeks with complicated weights pulling in different directions exerting lines of force from an overhead frame. So it has been since the time of Hippocrates. Different individuals have used different means to obtain the same end results. Only the patient can testify to the torture imposed upon him or the comfort he enjoyed.

Union of fractures is, without a doubt, very considerably promoted by early activity. Early activity is stressed more and more in the general treatment of fractures. One cannot question the movement of neighboring joints as long as the fragments are held in place. In fracture of the ribs, where motion is uninterrupted, and where the rib is efficiently splinted by neighboring ribs, fractures heal promptly and nonunion is unknown. If a child's leg is put in a cast for six weeks there will be enough bone atrophy to allow manual breaking with little effort. This gives clinical evidence of the low ebb of metabolism during inactivity. Just as massage of a rabbit's ears will transform a sluggish venous and arterial circulation to raging torrents under the microscope, so the blood supply in a limb during activity is vastly increased over that in rest. On the basis of this thought, early or almost immediate motion within reasonable limits, in impacted and spiked fracture of the hip, is not only permissible but indicated. Alternate stretching and relaxation of the ligamentum teres assist in pumping the blood along its course. One can scarcely understand how there can be any blood supply when the ligamentum teres is stretched taut and compressed as it would be in the widely abducted and extended position when retained in a plaster cast for months.

We must, however, realize that the same method of reduction does not fit all cases. A fracture of long bones with squared ends is amenable to the ordinary reduction and plaster casts without much traction, whereas the diagonal break and the comminuted break, and the compound fracture, tax the ingenuity of the fracture surgeon. I still believe that the aged should be dealt with tenderly. My best results in the aged with broken hips have been with elevation and traction in flexion by a sling. The Whitman abduction in my hands has proved to be a pro-

moter of discomfort, hypostasis and finally death in the aged. I have no experience with internal fixation of a hip fracture. In the young, where restoration of full function is important, the more modern type of treatment can be used to advantage.

The common transverse fracture of the humerus above the condyle is not particularly difficult to treat. Proper contact is easy to accomplish because of the size of the cross section of the bone. Serrations are usually rough enough to prevent slipping when reduction is once accomplished. Posterior displacement of the distal fragment is the rule. Under ether manual manipulation, traction and flexion accomplishes reduction. Jones' position of acute flexion maintains it. The splinting of this fracture by the triceps tendon, upon which the Jones' position depends, produces one of the best fixations in the entire range of fracture treatment.

In case of spicules and oblique breaks, reduction and maintenance of reduction often become difficult and even impossible. Comminution gives rise to a similar problem, especially where the fracture runs through the fossae. Often the displacement is due to the rotation of the proximal fragment upon the distal fragment. Epiphyseal separation presents smooth slippery surfaces which may easily become displaced. The thin bony membrane between fossae easily breaks down, leaving the fragments to straddle each other. If this condition is overlooked because of poor x-rays, and left untreated, the result will be a blocking of both coronoid and olecranon fossae. Callous formation associated with healing completely obliterates these fossae and the motion at the elbow joint is restricted and almost complete immobility results. Open reduction here is associated with danger of infection and injury to joint. A Kirschner wire through the olecranon combined with weight traction, elastic traction, or fixed traction, produces satisfactory results in many cases.

Many times good apposition becomes necessary to control the length of the forearm and rotation of the upper fragment, and to prevent straddling of the fragments. The upper fragment rotates in the glenoid cavity but it can be controlled with a Kirschner wire passed through the tuberosity. If one passes a wire through any other part of the humerus he is certain to encounter three large structures; namely, the nerve, the artery and the vein. One enters the tuberosity through the deltoid muscle and comes out upon the other side, with no risk of injuring anything except the biceps tendon where it passes through

the biceps groove. The length can be controlled by a wire passed through the olecranon about one inch from the tip and one-fourth of an inch from the edge, thus missing the ulnar nerve; or an incision can be made along the inner border of the olecranon and the ulnar nerve isolated so that the wire will not puncture it when passing through the bone. Personally, I prefer the former because of the chance of infection through an incision. With wires in place we use a traction frame to adjust the fragments and check under fluoroscope. Next, we fit the plaster of paris jacket with arm abducted to 90 degrees, the so-called aeroplane splint. When the cast is dry the wire tighteners may be adjusted and the traction frame removed. Frequent x-ray check-ups ease the surgeon's conscience and keep him informed. In T and Y fractures, screw calipers are used instead of wire through the olecranon, to force fragments into close apposition and provide traction and rotation. The caliper compresses the condyles and thus accurately closes the gap of the vertical component of the fracture. After the two fragments have been brought to normal relation the caliper yoke is used to apply traction and to bring the two lower fragments into correct relation with the upper fragment. The caliper is then incorporated in the cast after satisfactory reduction has been accomplished by means of traction frame, as evidenced by fluoroscopic vision or x-ray.

In treating fractures of the tibia and the fibula we must reduce and hold in place longitudinal, rotary, angular and transverse displacements. The most important is correction of the longitudinal displacement or shortening. The procedure of reduction usually, but not always, brings the fragments into line, due to the muscles of the leg squeezing the bone fragments into place. The advantage of mechanical reduction is that the position can be maintained during the application of the plaster cast once the fragments are firmly locked into place, while it is extremely difficult to get manual traction and hold it over any period of time. A traction frame then is a distinct asset in any irreducible fracture or one which will not stay reduced. Some men use Kirschner wires, but I prefer the Steinman pin in fractures of the lower limbs because the bones are larger and there is no danger of bending pins when force is applied.

In fracture of the leg we may expect anything from a green stick to a compound comminuted fracture. Possibly, because of circulatory reasons, fractures occurring at the junction of the middle and lower thirds of the tibia heal slowly

and often refuse to unite, necessitating drastic means such as freshening the ends of the bones in open reduction or traumatizing them by weight bearing. The spiral fracture of the tibia is almost impossible to hold in place with ordinary traction by weight. The bed gets hard and the foot is often out of line every morning. The adhesive tape slips and there is no rest for the patient, or the doctor either, for that matter. We may put one Steinman pin through the tubercle of the tibia and another through the lower end of the tibia or os calcis, fix both in a traction frame and adjust the fragments, separating and later locking them into place under the fluoroscope. Under the fluoroscope, during the process of traction, we see the fragments fall into line. There is a loose piece of bone triangular in shape anywhere from one inch to one and one-half inches on a side. A twist of the wrist and a push of the surgeon's hand and it too falls into line. It is well to overstretch in order to get clearance. When every fragment is lined up, the traction may be released, and thus the ends are locked into place. The plaster cast is then applied with pins, and left to set, after which the traction frame is removed. The cast extends from well above the knees to the toes. Bohler's walking stirrup may be attached and the patient permitted to bear weight after one to three weeks. This may sound like a fairy tale, but my patients have told me that this method gives postoperative comfort which is much appreciated.

In complicated fractures of the femur I would call your attention to the method of Thomson. The pin or wire is inserted perpendicularly through a trochanter about one and one-half inches below the upper end of the trochanter and one-half inch inside the outer surface for skeletal traction. The pin or wire should be inserted through the condyle of the femur for counter-traction in regulating the length and apposition of the fragments. The x-ray should be used to verify the work and this procedure should be treated as a major surgical operation. The limb should then be attached to the traction frame, and reduction and apposition of fragments accomplished. The plaster cast should be applied to maintain the position incorporating pins or wire tauteners. The frame may be removed when the plaster is set, and the pin or wire should be held secure until healing is positive. The cast should include hip and knee joints at first. My personal experience with Thomson's method of treating fracture of the femur is limited to one case. The fracture was spiral and located in the upper third of the femur. The reduction was spectacular, but when

I checked with the x-ray after five or six days I found the ends more than one inch apart. I resorted to open reduction and applied Sherman's venadium steel plate with self tapping screws, and then supported the leg in the proper sling from an overhead frame. Weights gave the proper amount of traction applied to the Steinman pin through the lower end of the femur. The reduction was perfect, and the final results were perfect.

In case any of these fractures are compound the limb can remain in the traction frame, without a cast, supported in a sling. Dakin's treatment or any other treatment may be carried out until infection and swelling are gone, at which time a cast may be applied as in simple fractures. Many limbs have been sacrificed in the past because the operator neglected to treat a compound infected fracture. The World War gave us the illustrious Carrell and Dakin to show us the way. It has almost become a disgrace to amputate an arm or leg with infected compound fracture without first trying Carrell's or Dakin's treatment, or some other method of cleaning the wound. In reduction of these fractures I inject two per cent novocain at the insertion points of the pins and wires and also about the fragments in the region of the fracture. The reduction is painless and the post-operative course comfortable. I use non-padded form fitting casts. My patient is happy because he did not have to take ether or lie in bed fastened to a series of weights hung from a frame. He is an enthusiast because he saw those bones in his forearm go back into place under the fluoroscope, just as I did.

I sometimes think that healing of fractures is delayed by additional injury to the bone when the wires and pins are put in place. Some men drive pins through, but I believe less injury accompanies drilling or boring wire or pins through by means of handles fastened to the end of the wire or pin for that purpose. Progress of healing should be checked by x-ray. The patient, although in an ambulatory condition, should use crutches to bear the weight which would fall on the injured leg. During the active process of repair edema and swelling will interfere with ambulation. Some of the pleasing features of this method of treatment are; the short period of hospitalization; the early walking; and finally the much better end results.

CASE REPORTS

J. J. was a coal miner, sixty years of age. Slate roof in an Iowa coal mine fell and broke his nose, fractured three or four ribs, cut off the tip of a finger, cut a gash in his hand, and produced a

comminuted fracture at the junction of the lower and middle thirds of his left leg; tibia and fibula. After he had overcome shock we placed his leg in elevation flexion and traction by tape and weights from an overhead frame. The usual slipping of tape, discomfort to patient, and persistent non-reduction was the result. After four days of this attempt the leg was again painted with iodine and left to drain. The iodine was then removed with alcohol. Under local anesthesia Steinman pins were inserted, one through the tibial tubercle and one through the os calcis. I chose the os calcis because the distal tibial fragment was split lengthwise, and the tip of the internal malleolus was broken off. The man was placed on the x-ray table and the leg fastened to a traction frame. Under fluoroscope vision the fragments were lined up as best I could with a fracture of this type. A non-padded and form fitting cast was applied from the middle of the thigh to the toes. After the cast had set the traction frame was removed. The patient's perfect comfort was a source of much astonishment to his friends. He received 60 per cent of his wages, hospital care, and medical care from his insurance company. His broad smile beamed contentment in spite of a broken nose. After six months' pay we finally convinced him that his leg was able to bear his weight.

J. W. M. was a man sixty years of age who broke his left forearm about the middle, splitting the ulna, as the result of an automobile accident. His family physician reduced the fracture and applied a splint, and brought him to me for x-ray check-up. The forearm was badly bent, and shortened about one and one-half inches. The distal fragment of the ulna was driven into the split end of the proximal fragment. Two per cent novocain was injected into the fracture area and along each side of the olecranon tip and lateral areas of the wrist. A Kirschner wire was inserted about one inch from the tip and one-fourth of an inch from the edge of the olecranon, and one through the ulna and radius, in both instances about one and one-fourth inches up from the lower ends. The patient was seated beside an x-ray table and his forearm was fastened to traction frame. Under fluoroscope view the fragments were brought into line and locked as well as possible. A non-padded and form fitting cast was applied with the elbow at right angles. Kirschner wire tauteners were incorporated; when the cast was set the tauteners were fastened to wires and the frame was removed. His reduction was painless and his postoperative course comfortable. He supervised his chores and work on the farm. Since he was up and about he was in good spirits

and enjoyed a good appetite. The wires were removed in three weeks. The cast was discarded after six or seven weeks. The results were very gratifying and the patient is well satisfied.

It is, of course, folly to advocate standardizing the treatment of fractures to the extent that there should be hard and fixed procedures in every case. After all, we are concerned with reduction, maintenance of reduction, healing and function. It is the duty of the individual physician to decide the best procedure for the case in hand. It is often to the benefit of the patient if his physician will recognize his own limitations and call in the more expert operator to help him. This cooperative spirit should be practiced more on the part of the non-expert, and it should also be appreciated more by the specialist. It should be a means of cementing the general practitioner and his patient in life-long faith and friendship, rather than an opportunity for the specialist to rob and belittle the referring physician who is less fortunate in his attainments. It is the author's hope that in the future we may learn to choose, without prejudice, that method which will give our fracture patient the best results with the least amount of suffering and the least risk to his life.

Case Report

SUBLUXATION OF THE RIGHT KNEE JOINT WITH SUPRA-ARTICULAR LOCKING OF THE PATELLA

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Past history: A white female, E. K., fifty-four years of age, a divorced widow, was occupied doing housekeeping and general house cleaning. The patient had had a suspension of the uterus and perineal repair in November, 1907, repair of a ventral hernia in February, 1924, and a thyroidectomy in June, 1926. She gave a history of a chronic dislocation of the right knee which she stated had been dislocated about twenty-five times. It had always been easily reduced by traction on the leg except once when it was necessary to place her under an anesthetic for reduction after several attempts at traction had failed. Her left knee had been dislocated four times and was always easily reduced by traction. There had been no dislocation of the right knee for more than one year, and none of the left knee for more than two years. She had had occasional attacks of sore throat.

Obstetric history: The patient had given birth

to three children, all boys. One was thirty-one years of age, another twenty-nine, and the other child died of heart trouble in September, 1929, at the age of eighteen years.

Present history: On the morning of August 21, 1935, the patient arose from her bed in the morning about four o'clock as usual, and prepared breakfast for herself and children. Shortly after, while making her bed she stooped over with her knees resting against the side of the bed. She suddenly noticed severe pain in her right knee. When she tried to bend the knee it remained in extension and she noticed severe pain when trying to flex the knee. She asked her son to pull on the leg, thinking that it was a dislocation of the knee. This being unsuccessful she sent for me. She insisted that I pull on the leg to attempt reduction of a dislocation. The more traction I exerted the more pain she experienced. An x-ray was advised.

Physical examination: The examination revealed a white female, about fifty-five years of age, poorly nourished, with the face showing an expression of pain. The scalp, face and neck were



Fig. 1. Anteroposterior view of the right knee.

generally negative. She wore an upper plate and her lower teeth were in a poor condition. There were small imbedded tonsils. The chest was generally negative, and the heart showed a very mild systolic murmur at the apex. The lower extremities showed a marked genu varum. The right knee showed a pronounced hard firm immovable mass just above the knee joint proper; pressure and attempted motion of the same produced pain.

Diagnosis: Anteroposterior and lateral x-ray pictures (see Figures 1 and 2) showed that the patella had been pushed upward. The upper portion had been dislocated anteriorly, permitting the lower edge to lock behind the articular surface of the femur posteriorly, the patella being tilted at an angle of about 35 degrees. There did not seem to be any rupture of the patellar or quadriceps tendons.

Treatment: The patient was given one-fourth of a grain of morphine sulphate immediately to relieve her pain. She was removed to a hospital, x-ray pictures were taken, and a diagnosis was established. She was given a general anesthetic and by means of medial and lateral motion on the patella it was dislodged and returned to its normal position. The extremity was then placed in extension

COMMENT

This case is unusual, in that the patella had been displaced upward without rupture of the patellar tendon. There was no evidence whatsoever of a rupture of either the patellar or the quadriceps tendons such as swelling, hematoma, or discoloration of the skin. It will be noted from a close examination of the x-ray pictures that there are mild arthritic changes in the joint which are possibly just sufficient to cause a roughening of the upper limit of the articular surface of the lower end of the femur anteriorly, behind which the patella was hooked while it was displaced upward by the external force of the side of the bed. It is also interesting to note that while the patient was under the anesthetic and the patella replaced to its normal position, there was sufficient laxity of the patellar tendon to permit hooking the patella back to where it was locked and replacing it again to its normal position with great ease. The extremity was maintained in the cast for six weeks to allow the patellar tendon to contract in the hope that some of its laxity would be taken up. I have seen this patient at intervals during the past two years and watched for a recurrence of her trouble. No recurrence has taken place to date with the patient exerting only moderate care not to place pressure against that knee.



Fig. 2. Lateral view of the right knee.

sion and a posterior cast was applied, extending from the upper limits of the thigh down to encase the foot. It was maintained in this cast for a period of six weeks, the patient being permitted to place her weight on the leg after a period of two weeks. After the cast was removed the patient showed only a small amount of stiffness of the right knee and a small amount of pain on flexion, both of which soon disappeared. She was advised not to place her knee against anything such as she did when this accident occurred. To date she has noticed nothing unusual about the knee except some occasional arthritic pains.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

BLOOD TRANSFUSION*

ELMER L. DeGOWIN, M.D., Iowa City

The popularity of blood transfusion as a therapeutic measure has steadily increased since the introduction of sodium citrate as an anticoagulant during the World War. The number of transfusions given in the United States in a single year must now reach a staggering total. During the last three years, for example, approximately one thousand transfusions per year have been administered in the University Hospitals.

As a result of the increasing use of this procedure there is now a widespread attempt at revaluation of technic and results. This fact would seem to indicate that the general experience has not been entirely satisfactory. It is not within the scope of this article to discuss indications and contraindications but it should be pointed out that the conclusion reached by Blundell¹ in 1834 is still valid; namely, that the primary indication

*From the Department of Internal Medicine.

for the transfusion of blood is in hemorrhage. Although the scope has been greatly extended in modern times, still the most dramatic and satisfactory results are encountered in the treatment of posthemorrhagic anemia.

Classification of Blood Groups:

By 1910 it was recognized that the bloods of most human beings could be assigned to one of four groups. Unfortunately, two classifications came into use, both of which designated the groups by numerals which were not identical. These were the classifications of Moss, an American, and Janský, a Pole. To obviate this source of confusion the Landsteiner or International Classification has been introduced to supersede the other two. This denominates the groups by capital letters which are also used to indicate the agglutinogens which the corpuscles contain. This constitutes a more descriptive nomenclature and has been universally adopted in the literature on blood grouping. Its use is absolutely necessary to understand the complex relationships which arise when applying the facts of iso-agglutination to legal medicine.

VARIOUS NOMENCLATURES OF IDENTICAL BLOOD GROUPS

<i>International</i>	<i>Moss</i>	<i>Janský</i>
O	IV	I
A	II	II
B	III	III
AB	I	IV

It will be noted in the International nomenclature that the corpuscles contain combinations of one or two of the agglutinogens A and B or none (the latter are designated as O for zero). The sera of these groups, by implication, contain agglutinins acting with the agglutinogens to produce agglutination. These agglutinins are designated by the small Greek letters α and β which act with A and B respectively. It follows that no single blood can contain an agglutinin and its corresponding agglutinin or it would be auto-agglutinating.

INTERACTIONS OF THE BLOOD GROUPS

Serum		Corpuscles			
	(Agglutinins)	O	A	B	AB
O	(α, β)	—	+	+	+
A	(β)	—	—	+	+
B	(α)	—	+	—	+
AB	(O)	—	—	—	—

(+ = agglutination)
(— = no agglutination)

In 1936 the University Hospitals abandoned the Moss classification and adopted the International nomenclature.

Blood Typing and Cross-Matching:

Where an organization of blood donors exists, it is necessary that both the donors and recipients be classified as to blood groups. It should be emphasized that Group A and B sera of high titer should be used for this purpose. A glance at the above table of interactions will show why the most frequent error in blood grouping is assigning a blood to Group O which is, in reality, some other group. This is explained by the fact that the diagnosis of Group O is made solely by the absence of agglutination by sera of Group A and Group B. Whether or not the bloods concerned in a transfusion are typed they must be cross-matched. All bloods belonging to the same group are not mutually compatible since subgroups do exist which cannot always be detected by the routine typing sera. The question of the best method of cross-matching naturally arises. It can be postulated that the method which allows intimate mixture of the serum and corpuscles has a definite advantage, and by this criterion the microscopic method using the hanging-drop would not be satisfactory. This proved to be true in a series of studies performed by E. M. Larson, M.D., of the Department of Bacteriology. We have found that the Vincent open slide method or the centrifuge method of Landsteiner is quite satisfactory. The former consists of combining a drop of serum and a drop of saline in which corpuscles are suspended on a microscopic slide and tilting the mixture back and forth for ten minutes by the clock. Agglutination and hemolysis can be seen with the unaided eye and agglutination can also be seen through the microscope. In the centrifuge technic small amounts of serum and suspension of cells are placed in small tubes and centrifuged for ten minutes. The tubes are then shaken and a drop examined on a slide with the microscope.

Methods of Transfusion:

Literally hundreds of methods of blood transfusion have been described and are in use today. Practically all may be classified as citrate or non-citrate methods. The most desirable method is still the subject of some disagreement. Some feel that better results can be obtained by the administration of whole blood, but this opinion has never been substantiated by experiment. The disadvantages of the direct methods are the hazards of clotting, the difficulty of cleaning complicated apparatus, the expense of the apparatus, and the necessary propinquity of the donor in the opera-

tion. Some writers have also called attention to the possible danger of transferring organisms from the recipient to the donor when apparatus with the automatic type of valve is used. In general, the citrate methods are more convenient, time is not a factor when the anticoagulant is used, and the apparatuses are less expensive and easier to clean. The presence of the donor is not required at the time and place where the blood is administered. Recent experiments have demonstrated that citrated blood can be stored for days, and there is at least one instance where it was transported from South America to Europe by steamship and administered with safety. The administration of citrated blood can be made so slowly that clinical reactions can often be detected and the transfusion discontinued before the patient has received a large amount of blood. A recent survey of 350 hospitals in this country by Philip Levine² shows that the citrate method is used by the majority and is steadily increasing in popularity. It is used exclusively at the University Hospitals.

The Use of "Universal Donors":

It has been the practice of some to use the blood of Group O donors for transfusions into individuals of other groups. This has the advantage of convenience and, at times, may be necessary. The procedure is based on the fact that Group O blood contains no agglutinogens and on the assumption that the α and β agglutinins of the serum will be so diluted by the recipient's serum as to be ineffective. Many writers have warned against this assumption and a case where such blood caused hemolysis in a patient was reported from the University Hospitals.³

POSTTRANSFUSION REACTIONS

In spite of the elaborate precautions which have surrounded the administration of blood there is still a mortality from blood transfusion. Most statistics show a death rate between 0.2 and 0.4 per cent.⁴ A summary of the various types of reactions follows:

Febrile reactions: These are the most common type and were formerly called "citrate reactions," despite the fact that they occur when no sodium citrate has been used. The recipient develops fever from two to twenty-four hours after the transfusion. This may persist for two or three days. It may be preceded by a chill. There is no evidence of hemolysis and no oliguria. This type is not the result of the administration of incompatible blood. It seldom requires special treatment and is not serious. The cause of the reaction is not known.

Citrate reactions: If an excess of sodium citrate is added to the blood of the donor it is free to bind the serum calcium of the recipient and thus produce tetany. The theoretical amount of sodium citrate required per unit volume of blood has been well worked out and should not be exceeded.

Urticaria: This is occasionally a sequel of transfusion and may be severe. While some cases are definitely allergic the majority cannot be so proved. Epinephrine should be tried but is frequently ineffective.

Allergic reactions: Where the recipient is allergic there is always a possibility of transmitting to him proteins to which he is sensitive which are present in the serum of the donor. There is evidence to show that some proteins may be absorbed from the gastro-intestinal tract without being broken down to amino-acids. There is a case on record of an asthmatic sensitive to egg albumen receiving blood from a donor who had just previously ingested eggs. The recipient promptly developed a severe asthmatic attack. It is advised that donors be fasted from four to five hours before giving blood.

Transmission of disease: Theoretically, most diseases in which a bacteremia occurs could be transmitted from donor to recipient by transfusion. Practically, if the donor is apparently healthy, the number of diseases so transmitted is relatively small. Syphilis and malaria are probably the most common. Whenever possible, the donor should have a blood Wassermann or Kahn test just prior to the transfusion. Physical examination of the donor should be made for primary and secondary syphilitic lesions even if the serologic tests are negative. Some hospitals now perform a Kline precipitation test at the time the bloods are cross-matched. Examinations of the blood film should reveal malarial parasites.

Hemorrhagic reactions: Bleeding from the gastro-intestinal tract is occasionally a complication of blood transfusion. Purpuric eruptions also occur. One of the serious sequelae is the occurrence of retinal hemorrhages. We have observed hemorrhages in the maculae in two patients in the University Hospitals. These reactions seem to occur most commonly in patients having blood dyscrasias.

Edema of the lungs: In the last two years we have observed two patients who received transfusions and, within a few minutes in one case and several hours in the other case, developed profound edema of the lungs with cyanosis, dyspnea and death. The bloods administered were not incompatible by any laboratory test known and au-

toppies showed no evidence of hemolysis. Both patients undoubtedly died from edema of the lungs. One had uremia from chronic glomerular nephritis and the other had a *Streptococcus haemolyticus* septicemia. In one case only 200 cubic centimeters of blood were administered. It is conceivable that the right side of the heart was overburdened by the increase in volume of the blood but this scarcely explains the situation when only 200 cubic centimeters of blood were administered. Plummer,⁵ in England, has recently described five patients who died from pulmonary edema after transfusion. It is possible that there is some direct effect on the capillaries of the lungs. At present the most conservative practice would seem to consist of withholding transfusions from any patient in whom edema of the lungs is likely to occur spontaneously, such as in uremia or cardiac insufficiency.

Hemolysis without renal insufficiency: Most of the hemolytic reactions which occur after blood transfusion are the result of the administration of incompatible blood. The current conception is that the incompatible corpuscles are first agglutinated and then hemolyzed in the recipient's veins. During the transfusion, or soon afterward, the recipient complains of a variety of symptoms, such as a feeling of constriction in the chest, severe abdominal pain, pain in the region of the kidneys, and cramps in the legs. Transient jaundice may then occur and the urine may contain hemoglobin but no erythrocytes. There is usually a transient febrile reaction also. In some cases the patient excretes a part of the hemoglobin and makes an uneventful recovery. Mild hemolytic reactions may not be diagnosed unless carefully searched for, since only about ten per cent of the hemoglobin set free in the blood stream is excreted through the kidneys. The most reliable method of detecting a hemolytic reaction is to draw a sample of the recipient's blood one or two hours after the reaction and demonstrate the hemoglobin-tinged serum. Occasionally a hemolytic reaction occurs when no incompatibility of bloods can be demonstrated by any known laboratory method. The cause of this is, as yet, obscure. It should be emphasized that hemoglobinuria occurs in other conditions also, such as idiosyncrasy to quinine and sulfanilamide, overdosage from phenylhydrazine, in blackwater fever (probably due to malignant malaria), and in paroxysmal hemoglobinuria.

Hemolytic reactions with renal insufficiency: As indicated above, hemoglobinuria can occur without any serious sequelae. In other cases, however, after the initial symptoms accompanying the hemo-

lyzing of the incompatible corpuscles, the excretion of urine suddenly diminishes or ceases entirely. The patient continues to vomit. The blood pressure remains normal but there is chemical evidence of nitrogen retention in the blood. The values for blood urea nitrogen, nonprotein nitrogen, and creatinine mount daily. Coma develops and the patient may die of renal insufficiency, usually from four to twelve days after the transfusion. At any time during the course of this syndrome diuresis may occur spontaneously with subsequent recovery. The mortality in cases developing renal insufficiency from blood transfusion can scarcely be estimated because the numbers reported are too small to be of statistical significance. In 2,500 transfusions at the University Hospitals six such cases occurred, five died and one recovered.^{4 and 6} The morbid anatomy in such cases is confined primarily to the kidney. There, two types of lesions can be found. In one, the lumina of Henle's loops are obstructed with brownish pigment which is a derivative of hemoglobin. In the other, there are varying degrees of tubular necrosis. Different cases differ widely in the amount of tubular obstruction and necrosis which they exhibit. We have been particularly interested in producing these renal lesions experimentally. Baker and Dodds⁷ induced renal insufficiency in rabbits transfused with hemoglobin. They showed that this phenomenon occurred only when the urine was acid and that the presence of an alkaline urine protected the animal against renal damage. We have been able to confirm these experiments in dogs and to extend the observations on the morbid anatomy.^{8 and 9} It would appear that while the precipitation of pigment in the renal tubules occurs in man also, there is apparently another mechanism producing tubular necrosis which has not yet been elucidated.

From an analysis of our cases of transfusion anuria and a review of the literature, we conclude that there is yet no known effective method of treatment once the syndrome appears. From our work and the work of Baker and Dodds, we feel justified in recommending routine alkalization of the urine of the recipient before transfusion, preferably by the oral administration of alkalis. We are not at present prepared to state that this will prevent all cases of transfusion anuria. We have used the following therapeutic procedures in our cases: intravenous hypertonic dextrose and saline; isotonic saline (intravenously) in large quantities; roentgen irradiation and diathermy over the kidney regions; phlebotomy; blood transfusions; intravenous sodium bicarbonate; salyrgan intravenously; caffeine intramuscularly; and spinal anesthesia. Most of these have been re-

ported in the literature as successful and have failed in practice. We have had no experience with decapsulation of the kidneys but that has also sometimes failed in the hands of others.

CONCLUSION

The inescapable conclusion which seems to be warranted from this discussion is that the transfusion of blood is still a major therapeutic procedure with a mortality rate which cannot be ignored. This paper is not intended to convey the impression that too many transfusions are being given, but rather to emphasize the need for care in considering indications and in the actual technique of administering blood.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

GANGRENE OF THE PENIS

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A case of penile gangrene is presented, the etiologic factor seemingly a thrombosis of the dorsal artery of the penis. A careful review of the literature shows that this entity is infrequently encountered.

CASE REPORT

H. G., a man seventy-two years of age, noted on February 17, 1937, that there was some blood in his urine. His activities of the past few months had been quite limited because of increasing general debility. A few days later he was seen by one of us (B. M.) and at that time presented a picture of marked toxicity. The tongue was thick, heavily coated and so dry that speech was difficult. There was great emaciation and evidence of dehydration. The temperature was 101 degrees; the

pulse 104, weak and irregular. The patient was voiding normally and a specimen at that time contained a trace of albumin but was otherwise unremarkable. His extreme modesty and retiring nature forbade mention of the subsequent development of swelling of the penis and medical advice was not sought again until February 26, when he had found himself unable to void during the previous twenty-four hours. The intervening history is therefore indistinct, but his wife assured us that other than some swelling and redness, the penis was normal.

Past history: This man recovered from a meningitis when he was thirteen years of age, but had some residual rigidity of the neck and the right hip. A parkinsonian syndrome had been gradually developing and at the time of admittance he had the typical masklike expression, open mouth, and a coarse "pill-rolling" tremor more extreme in the right hand. This syndrome made him appear older than the stated age. He admitted a Neisserian infection in his youth. The patient had married late in life.

Physical examination: On examination the penis was found to be greatly swollen. The color of the urethral (posterior) aspect was brownish-black in the distal two-thirds. This area was sodden with urine which apparently had oozed from a small perforation at the proximal end of the gangrenous area. The odor was strongly ammoniacal. The scrotum was secondarily reddened but no areas of gangrene were evident. The prepuce and glans were swollen and inflamed but viable. The bladder was greatly distended, being palpable one finger's breadth below the umbilicus. The patient's general condition was poor, the tongue so dry that speech was impossible. He was immediately sent to the hospital.

Course in the hospital: On admission to the hospital a small catheter was gently inserted. An obstruction was encountered two centimeters from the meatus. An immediate suprapubic cystostomy was done under novocain infiltration to decompress the bladder. The prostate gland was palpated and found to be small. The penis was then swathed in hot boric compresses and the scrotum elevated from the dependent position. Five per cent glucose in saline was given intravenously postoperatively. His general condition improved considerably thereafter and the swelling in the genitalia lessened. The suprapubic drainage functioned adequately. On the second day the cavernous urethra containing the occluded urethra and the corpora cavernosa began to separate from the still viable skin and glans. This gangrenous portion was freely incised and some of the detritus was removed. His condition remained unchanged

for the following week. Drainage from the bladder was slightly blood tinged and the penis continued to shrink, but no proximal line of demarcation appeared. On the ninth postoperative day, toxic symptoms suddenly increased and the gangrenous area extended proximally to the perineum. The patient lapsed into coma and expired on the following day.

Autopsy findings: The body was that of an emaciated old white man estimated to measure 68 inches in length and to weigh 110 pounds. Externally the body was remarkable because of a recent surgical incision just above the symphysis pubis. The scrotum was gangrenous and the subcutaneous tissues in the lower portion of the abdomen were also infiltrated with pus. The subcutaneous fat was very scanty and the abdominal and thoracic muscles were poorly developed, being thin and ribbonlike. When the peritoneum was opened the small intestine which was distended bulged through the incision. The large intestine was collapsed and the upper three feet of the small intestine were also small. The distention of the remainder of the small intestine was found to be due to a volvulus in the right lower quadrant. The ribs cut with markedly decreased resistance. The lungs were free in the thoracic cavity. The pericardial sac contained thirty cubic centimeters of clear, straw colored fluid and the heart appeared normal in size. On routine dissection it showed moderate arteriosclerotic changes involving the bases of the mitral and aortic cusps. The coronary arteries were calcified and very tortuous, but on dissection the lumen was relatively large. The muscle of the left ventricle averaged ten millimeters in thickness. The heart weighed 375 grams. Each lung showed moderate congestion and edema in the dependent portions. One sharply localized wedge shaped area was found in the lowest lobe on the right side. The liver was estimated to weigh 1,100 grams. Externally and on section it was not remarkable. The gallbladder was small and the cystic duct contained several small, soft stones and the viscus contained watery bile. The common and hepatic ducts were patent and contained clear bile. The spleen, pancreas, and adrenal glands were not remarkable. The kidneys together weighed 195 grams. Externally and on section they showed only the changes due to arteriosclerosis. The ureters appeared normal. The urinary bladder had been opened and the mucosa was dark red and faintly granular. The stomach and small intestine were not remarkable. On sectioning the colon several thin walled diverticula were found along the sigmoid. On dissection of the hemorrhoidal and pelvic blood vessels no

thrombi were found. The vena cava contained postmortem clots and fluid blood. The descending thoracic aorta showed a small saccular dilatation which contained clotted blood, thought to be ante mortem. The entire aorta showed very marked arteriosclerotic changes with a tendency for the intima to ulcerate especially just above the bifurcation. Elsewhere there was an occasional hemorrhage beneath the intima.

Special examination: The left side of the scrotum was gangrenous and a large portion of the skin, subcutaneous tissue and the penis had sloughed away leaving a foul ulcer. On dissection the dorsal artery of the penis was sclerotic. The urethra communicated with the gangrenous tissues but a probe could not be passed from below or above. No thrombi were found in the vessels of the perineum or pelvis. No definite evidence as to the cause of the gangrene could be determined. It is possible, however, that an embolus from the aortic thrombus occluded an artery to the left side of the scrotum and penis, and that it was lost in the slough.

Microscopic notes: Sections of the aorta showed marked deposits of cholesterine crystals and of calcium. Ulceration of the intima was common and in two areas there were definite fresh thrombi in such ulcers. The apex of the lungs showed dense pigmented scars without signs of active tuberculosis. The kidneys showed the changes characteristic of arteriosclerosis. The liver showed chronic passive congestion. Sections of the penis showed arteriosclerosis of the dorsal artery with a marked decrease in the size of the lumen.

DISCUSSION

In reviewing the literature approximately seventy-five articles were uncovered which dealt with gangrene of the penis either alone or in combination with scrotal involvement. Three points were impressed upon us: first, the careful description which the early writers made and their ingenious deductions despite the limited knowledge which they had in bacteriologic or physiologic facts as we now know them; second, the scant reference in anatomic textbooks to the circulation of the penis; and third, the universal agreement concerning the rapidity of development of this entity once it is established.

The earliest report which we were able to find was a case report by Partridge,¹ an English surgeon, in 1857. His description, reported eighty years ago, is so vivid that it warrants quotation. "The whole penis as far as its root in front of the scrotum was found to be gangrenous with a distinct line of demarcation between the dead and

living parts. The mortified part was black, half dry, collapsed, and looked like the empty finger of an old black kid glove. The urine dribbled from an aperture between the gangrenous and sound parts." It is interesting to note that this description, save for the demarcating line, more nearly approaches the appearance of our case than any which was encountered. In 1905, Whiting² collected all cases of penile and scrotal gangrene and added three of his own, making a total of 96. In part he says: "The exciting cause of gangrene of the scrotum and penis may be anything which interferes with the nutrition of the part to such an extent that local death results. The rapidity with which gangrene occurs and the extent of the gangrenous process will be greatly modified by the condition of nutrition of the part, the resistive powers of the patient, and the character of the exciting cause." Whiting then submits the following etiologic classification of penile gangrene:

1. Due to the action of bacteria either through "the specific chemical substance which they liberate or as the result of vascular obstruction due to the inflammatory process to which they give rise." (Warren)

2. Due to interference by obstructing the circulation, the causes being other than micro-organismal invasion, as in cases of non-inflammatory edema and cases of infiltration of urine.

3. Due to direct mechanical or chemical irritation of the tissues.

4. Due to thermal agencies.

5. Due to injury to the so-called trophic nerves, the neuropathic group.

Fournier,³ in 1883, in reporting his cases of what he called erosive balanitis, cited three constant phenomena, namely:

1. The sudden explosion of the phenomena in the midst of perfect health.

2. The rapid evolution of mortification.

3. The apparent total absence of any of the usual causes of gangrene.

In 1909, Corbus and Harris⁴ reported three cases of erosive and gangrenous balanitis, the fourth venereal disease. It was their contention that since fusiform bacilli and an organism resembling Vincent's spirillum were found, and further that the histories revealed either unnatural sex acts or the use of sputum as a lubricant, the etiologic factor was an oral contamination. The disease was popularly called Corbus' disease and scattering reports may be found upholding this theory. However, more recently Brams and Pilot⁵ disproved this theory by running a control series and finding these same organisms normally pres-

ent in one hundred individuals who had no sign of a penile infection.

Campbell⁶ after studying the problem arrived at the following conclusions:

1. It is a clinical entity readily distinguishable from urinary extravasation, diabetic gangrene, and the passive edemata of certain other organic diseases.

2. Apparently it is an acute streptococcic infection of the skin and subcutaneous tissues comparable to erysipelas.

3. Like erysipelas it spares the underlying structures.

4. Unlike erysipelas it is characteristically a gangrenous process, although gangrene is not unknown in erysipelas elsewhere in the body.

5. The mortality rate is between twenty and twenty-five per cent.

6. The spread of the disease may be controlled by excising gangrenous skin and draining gangrenous and suppurating subcutaneous tissue.

COMMENT

The findings in the case reported are in general agreement with those of earlier writers. They differ in that the selective nature of the gangrene was limited to the corpus cavernosum urethrae and was probably due to vascular occlusion in the arterial circulation supplying that part. The pre-existing general debility was an important factor which contributed to the patient's inability to limit or demarcate the gangrenous process.

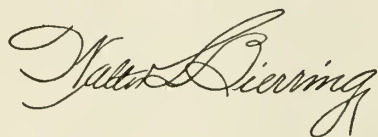
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THE SAN FRANCISCO SESSION

Members of the Iowa State Medical Society who are planning to attend the Annual Session of the American Medical Association to be held in San Francisco, California, June 11 to 17, 1938, are urged to secure their hotel accommodations immediately. A large number of national organizations have scheduled conventions for this summer, and it is expected that hotel rooms will be at a premium. Communications should be addressed to Dr. F. C. Warnshuis, Suite 2004, 450 Sutter Street, San Francisco, California.

STATE DEPARTMENT OF HEALTH



NOTES ON PNEUMONIA

Case Reports

During the past number of weeks, many records of pneumonia cases have reached the State Department of Health from attending physicians in various parts of the state. These reports not only state the pathologic character of the disease, whether due to lobar pneumonia or bronchopneumonia, but also specify the causative type of pneumococcus. The reports indicate that the Neufeld method of typing of pneumococci has been used to a considerable extent in recent years, by some of the physicians in Iowa and that there is increased interest in this method of diagnosis at the present time. With continuance of interest and cooperation on the part of attending physicians and workers associated with the many laboratories where the Neufeld technic is being carried out, valuable information will be made available relative to the frequency of the various types of pneumonia.

Antipneumococcic Serum for the Underprivileged Patient

As announced in the January number of the JOURNAL, page 18, limited funds made available to the Iowa State Department of Health through the United States Public Health Service, make it possible to furnish curative serum for the indigent or underprivileged patient whose type of pneumonia has been accurately determined according to the Neufeld method. Immediate attention will be given to calls by telephone or telegram from physicians who report cases. Serum will be forwarded with the least possible delay, in cooperation with a distributing pharmacist in or near the locality from which the case is reported, or directly from the State Department of Health, in Des Moines.

New Film on Management of the Pneumonias

A new film entitled "Management of the Pneumonias," prepared under the direction of Jesse G. M. Bullowa, M.D., of New York, was recently presented before medical groups in Des Moines,

Fort Dodge, Fort Des Moines and Sioux City. The film was shown in Fort Dodge as part of a regular meeting of the Webster County Medical Society, and in Sioux City at a special meeting of the Woodbury County Medical Society. Many physicians from adjoining counties were present at the meetings in Fort Dodge and Sioux City, and the large attendance was gratifying. Arrangements are being made with officers of various county medical societies, so that this film and the subject of pneumonia may be presented in other sections of Iowa during the latter part of February.

PREPARE AGAINST MEASLES

Abnormal prevalence of measles is developing in Iowa at this time, with the likelihood of a great increase in prevalence during the early months of 1938 and 1939. As stated in the January number of the JOURNAL, page 19, the number of measles cases reported during October, November and December of 1937 exceeded the expected number. In January, (through Jan. 26), 215 cases of measles were reported to the Iowa State Department of Health as contrasted with thirty-one cases in January, 1936, and seventeen cases in January, 1937. An unusual occurrence of measles was last experienced in 1935, in which year 21,432 cases were reported, with 151 deaths resulting from measles and its complications.

Most of the cases of measles are being reported from counties in the east central part of Iowa with scattered reports from some of the counties in southeastern and southern portions of the state. Weekly morbidity reports, issued by the United States Public Health Service, show widespread prevalence of measles in Illinois and Missouri. Other states reporting a high incidence of measles include Pennsylvania, Ohio, Indiana, Michigan and Wisconsin. For the week ending Saturday, January 15, Pennsylvania headed the list with over 5,000 reported cases. During the same week, Illinois reported nearly 2,000 cases and Missouri over 1,200 cases of measles.

Convalescent Measles Serum

During the spring months of 1935, convalescent measles serum in limited amount was made available to physicians in Iowa through the State Department of Health. Various types of convalescent or human immune serum have been processed in the Serum Center of the Iowa State Department of Health, since February, 1937. Every effort will be put forth during the coming weeks to supply convalescent measles serum in response to calls for attending physicians and hospitals. Bleeding clinics for measles immune serum were held in Davenport and Muscatine during the last week of January. Potential donors for measles serum, necessarily limited at this time, will increase rapidly in number in those communities which experience major prevalence of measles and in which there is complete reporting of cases of communicable disease.

DISTRIBUTION OF UNDULANT FEVER (BRUCELLOSIS) IN IOWA

The accompanying spot map of Iowa shows the distribution by counties, by residence and occupation, of undulant fever in Iowa. During the five year period from 1933 to 1937, cases officially reported to the Iowa State Department of Health numbered 690. The information as presented in

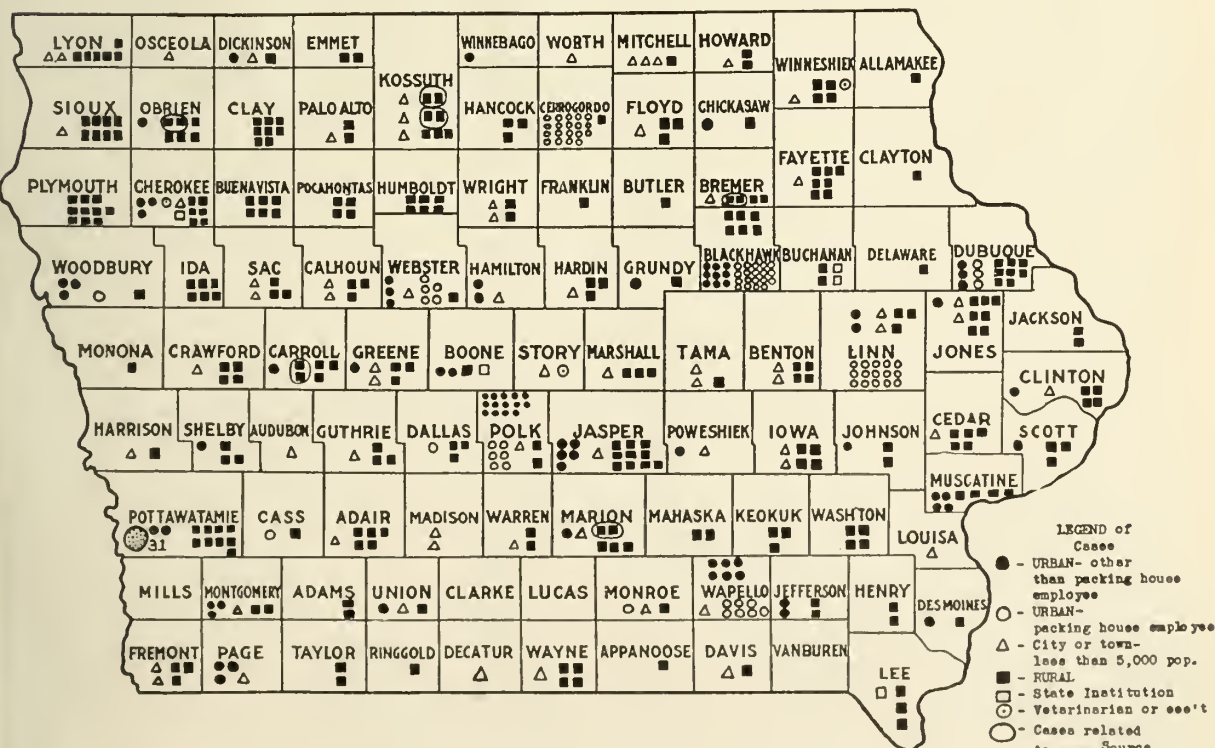
the spot map is based on a series of 538 case records which were completed by attending physicians and forwarded to the State Department of Health during the past five years. It will be noted that during the period mentioned, one or more cases of undulant fever were reported from all but four counties in the state. Of special significance was the occurrence of a milk-borne epidemic of undulant fever in Pottawattamie County in 1933, when thirty-one cases were traced to the porcine type of organism (*Brucella suis*) which contaminated a raw milk supply. Another outstanding feature is the unusual occurrence of the disease among persons employed in packing houses. Additional information pertaining to undulant fever and assembled case records is in preparation for a subsequent number of the JOURNAL.

PREVALENCE OF DISEASE

	Dec. '37	Nov. '37	Dec. '36	Most Cases Reported From
Diphtheria	27	17	14	Lee, Polk
Scarlet Fever	936	746	441	Polk, Marion, Monroe
Typhoid Fever	1	7	9	Des Moines
Smallpox	171	152	50	Mahaska, Cass
Measles	37	17	12	Muscatine, Dallas
Whooping Cough	113	172	85	Dubuque, Winneshiek
Cerebrospinal Meningitis	2	5	8	Appanoose, Hardin
Chickenpox	437	332	439	Lee, Dubuque, Story
Mumps	31	32	136	Dubuque
Poliomyelitis	2	22	2	Ida, Polk
Tuberculosis	50	87	54	(For State)
Undulant Fever	8	18	9	(For State)
Gonorrhea	183	117	184	(For State)
Syphilis	307	293	122	(For State)

UNDULANT FEVER (BRUCELLOSIS) IN IOWA

Showing Distribution According to County, Residence and Occupation of 538 Cases Reported for the Five Year Period from 1933 to 1937



The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

LEE FORREST HILL, Editor.....Des Moines
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Address all communications to the Editor of the Journal,
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OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII FEBRUARY, 1938 No. 2

THE MEANING OF THE TUBERCULIN TEST

Much has been said and written about the tuberculin test in recent years. As its sphere of usefulness has been elucidated, an ever increasing number of physicians have wisely familiarized themselves with its technic, interpretation and significance. There is little doubt but that this test, because of its proved value in the diagnosis of tuberculosis, will soon be as universally used by the rank and file of practicing physicians as is the examination of the urine in the diagnosis of diabetes.

Several difficulties which in the past have interfered with widespread adoption of the test have been cleared away by recent developments. The difficult procedure necessary to obtain proper dilutions of old tuberculin has been irksome to many non-arithmetically minded physicians; but now purified protein derivative, which is certainly the equivalent of and probably somewhat superior to old tuberculin, has been provided on the market in a form which requires merely the mixing of two supplied solutions. Furthermore, purified protein derivative comes in two strengths. The first strength, containing 0.00002 of a milligram in 0.1 cubic centimeter of diluent is recommended as the proper sized dose to use for all initial tests. For those who fail to react to the first dose, a second strength solution is available, which is 250 times stronger than the first strength. The second strength solution contains 0.005 of a milligram of purified protein derivative in 0.1 cubic centimeter of diluent. Experiments comparing purified protein derivative with old tuberculin have shown that the first strength of purified protein derivative corresponds in ability to locate reactors to about 0.1 of a milligram of old tuberculin. There is every reason to believe that the time is not far dis-

tant when a single test dose of purified protein derivative (or some other form of tuberculin) will be perfected. Such a simplification would indeed do much to increase the use of the tuberculin test.

A second stumbling block in the path of many physicians who have not as yet taken up tuberculin testing is the technic of applying the test, and the interpretation of the resulting reaction. Elsewhere in this issue of the JOURNAL is a special article, which graphically describes the technic of preparing and interpreting the tuberculin test. We feel this explanation may be of considerable assistance to some of our readers who may desire to add this procedure to their diagnostic armamentarium. However, even after the test has been properly executed and the correct interpretation made, there remains the problem of evaluating the significance of the test according to the modern concepts which have resulted from the vast amount of scientific work conducted in this field in the last decade or two. Obviously this important phase can be considered only briefly here, but those interested will find more detailed information in an excellent article, recently published by Harrington, Myers, and Levine.*

Perhaps the most important single point is that a positive tuberculin test is proof only that a primary complex exists somewhere in the body. It does not mean that the individual has chronic pulmonary tuberculosis or consumption, although this is likely to be the interpretation placed upon a positive reaction by the parent unless the situation is explained to him. True, the patient may have consumption but if so its presence must be determined by other means than the tuberculin test. The test becomes positive within three to seven weeks after infection with living tubercle bacilli takes place, and it remains positive, with few exceptions, throughout the life of the individual, due to the persistent viability of bacilli within the primary focus or in the associated lymph nodes. According to the authors referred to above, nothing ordinarily taken into the human body causes sensitization of the tissues to tuberculo-protein except tubercle bacilli themselves which are resulting in or have resulted in tubercle formation. Dead tubercle bacilli or the protein content of tubercle bacilli may produce sensitization artificially for a short time, but the tissues remain sensitive only as the result of the continuous production of tuberculo-protein from living tubercle bacilli.

A negative test may be accepted as practically conclusive proof that tuberculous infection is ab-

*Harrington, F. E., Myers, J. A., and Levine, N. M.: Significance of the tuberculin test. Jour. Am. Med. Assn., cviii:1309-1315 (April 17) 1937.

sent, provided the materials and technic used in performing the test are correct. Under certain conditions sensitivity may become depressed, necessitating larger doses of tuberculin to elicit a positive reaction, or the tissues may become desensitized altogether. It is possible, although probably of infrequent occurrence, that a primary complex may heal completely, indicating that all tubercle bacilli have been killed. In overwhelming tuberculous infection such as is seen in pneumonia, meningitis and miliary disease, sensitization is usually depressed. In chronic forms of the disease in terminal stages, overproduction of tuberculo-protein may desensitize the tissues, and again in certain of the exanthemata, such as measles and scarlet fever, sensitivity may be temporarily depressed.

Some difference of opinion exists among phthisiologists as to whether or not the size of the reacting area and the severity of the reaction bear any relationship to the extent of tuberculous pathology which one may expect to find in the body. Such experienced workers as the Lymanhurst group have failed to find that any such relationship exists, while others are of the opinion that the probability of grave tuberculous infection increases with the severity of the tuberculin reaction. This is a point which would seem to require further study before a final decision can be given.

The significance of positive tuberculin tests varies somewhat, depending upon the age of the individuals tested. For instance, in children under puberty, chronic pulmonary tuberculosis so rarely occurs that little additional information is gained from roentgenology. About twenty-five per cent of such children will show Ghon tubercles or calcified nodes in the x-ray films, and in about four per cent, particularly in the younger ages, one may discover the primary pulmonary focus in the acute inflammatory stage. In the 'teen and college age, and in young adult life, the chances of discovering developing or well established clinical disease in those who react positively to tuberculin are greatly increased. The figures for the different age levels indicating the frequency with which one may expect to uncover chronic pulmonary tuberculosis in positive reactors are as follows: children under puberty, one in 2,000 to 3,000 reactors; high school age, one in every 500 to 800 reactors; and in early adult life, one in every 100 to 200 reactors.

The idea once held that a positive tuberculin test is beneficial in that it indicates a state of immunity or acquired resistance is no longer tenable in view of present day concepts of the pathogenesis of tuberculosis. On the contrary a positive tuberculin test is proof that tubercle bacilli have

been planted in the body, which means that they may at any time, months or years later, or possibly never, break lose from their imprisonment, and on allergic soil develop into the serious chronic and destructive forms of disease. The realization of this concept has resulted in making possible a true early diagnosis of phthisis, for it has been shown that when serial x-ray films of positive reactors over the age of puberty have been made at yearly intervals, it is possible to demonstrate the presence of the disease process in the lung sometimes as long as three or four years before the onset of symptoms, at a time when therapeutic measures are most effective, and before the patient has become a source of contagion for his associates. The ultimate control of tuberculosis is largely dependent upon the extent to which this viewpoint is put into practice.

The positive tuberculin test has even further significance. Every positive reactor must have contracted his infection from some "open" source, and the family, friends and associates of these positive reactors must be tested if we wish to prevent further contamination. Conversely, every discovered "open" case of tuberculosis has undoubtedly infected many of his immediate associates, members of his family, his school mates, or his fellow workers. These individuals can be identified by the tuberculin test, and if the tests are followed up with the methods of tuberculosis control now available, they need not be added to the unfortunate victims who perpetuate the breeding places of these devastating organisms. The means are at hand by which tuberculosis can be completely eradicated from the human family. It only remains for physicians to recognize the possibilities of tuberculin testing and it is hoped that the medical profession of the state of Iowa will use this means of controlling tuberculosis with increasing frequency.

THE POLICY OF ORGANIZED MEDICINE

The attention of JOURNAL readers is directed to an editorial which appeared in the January 15 issue of the *Journal* of the American Medical Association. The title of the article is "Medical Care for all the People," and in it are included statements of principles and policies long awaited by the medical profession.

After due consideration the national organization has now formulated a definite policy relative to the many plans already operating throughout the United States for medical care of the indigent class and those in the low income group who are partially able to pay for medical service. According to recently adopted resolutions the American Medical Association has undertaken the task of

studying, in an exhaustive manner, these various plans, with the end in view of acting "specifically as a clearing house in the initiation, development and functioning of what may well evolve into a comprehensive system of medical care for all the people according to the American plan of medical practice."

In the editorial previously mentioned, reference was made to the Iowa plan of county contract care of the indigent group. It will be remembered that this plan was operating in a large percentage of counties in the state with a considerable degree of satisfaction before the federal relief administration was inaugurated. For some time now the medical profession has awaited an official pronouncement of the American Medical Association in this field, and it is sincerely to be hoped that each and every medical unit in the country will recognize the import of this national policy. It is organized medicine's answer to socialized medicine, cooperative medicine and other such systems.

The value of it will depend entirely upon the extent to which the public is convinced of this one fact; that the medical profession, and *only* the medical profession is qualified to judge the merits of any system of medical practice, and furthermore, that it can and does offer the public the best possible solution to the problem. To the latter task we must direct our efforts; and every intelligent clear-thinking physician will realize the importance of doing so immediately, both individually and collectively. Much valuable time has already been lost; let us not lose any more.

VIII. THE TREATMENT OF HYPERTENSIVE HEART DISEASE*

Fahr¹ estimates that about 140,000 people die annually in the United States from hypertension, and Cabot² has graphically shown that high blood pressure is by far the most important single cause of cardiac deaths. Small wonder, therefore, that numerous attempts have been made to find an efficient treatment against this killer of men; but no patent specific method of managing this disease has been discovered up to the present time. Thus, Allen's salt-free diet, Sansum's alkaline ash diet, and Stieglitz's bismuth subnitrate treatment have had their day, and have been laid to rest in the graveyard of useless therapeutic procedures from which they still sally forth occasionally to haunt the sufferer from high blood pressure. The latest attempt, the control of hypertension by means of surgery on the vegetative nervous system, is already showing evidence of aging.³ Hence, so far

as specific management is concerned, very little progress has been made since Allbutt first described hyperpiesia; yet much has been learned about the pathogenesis of this distressingly common disorder. Hypertension places an increased load on the heart. In order to satisfy the physiologic demand of the cells for blood, the heart must overwork. This leads to hypertrophy and ends in dilatation. The heart, therefore, fails from work exhaustion. The most effective method of preventing this failure then is to reduce the heart load to normal and maintain life on that level.

Therefore, if the hypertension is due to hyperthyroidism, a thyroidectomy should be done; if due to a tumor in the kidney region, the tumor should be removed; if due to obesity, a proper reducing diet is indicated. When an abnormal nervous tension leads to high blood pressure, the cause of the nervous irritability should be removed, if possible, and the less harmful of the sedative drugs should be administered to bring about repose. Strenuous physical or mental effort raises the blood pressure to dangerous levels in all individuals suffering from hypertension. Therefore, the strenuous life must be forbidden for these patients who wish to reach three score and ten years. Long hours of sleep, afternoon naps, and frequent short vacations are as essential to a person with high blood pressure as insulin is to the diabetic patient. The whole point is to reduce the metabolism of the heart to a normal level and to maintain that level by the appropriate curtailment of the individual's mental, physical, or metabolic activity. The extent of such reduction of the patient's energy output will vary with the person, from simple reduction of abnormal weight to complete bed rest with sedation.

In conclusion, may it be stressed once more that none of the so-called specific methods of treating hypertension can be depended upon to give the patient's heart permanent relief. The patient with the hereditary form of high blood pressure must be managed by his doctor from the day the abnormal tension is discovered to the end. The management consists of sparing the heart by maintaining the body metabolism at such a level that the heart can carry on without using up its reserve. However, many patients with hypertension sooner or later reach a stage when signs and symptoms of congestive failure appear. The treatment of these cases will be outlined in a subsequent chapter.

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* Editor's Note—This is the eighth article in this series of editorials prepared by Dr. Daniel J. Glomset on modern cardiac therapy. Earlier issues of the JOURNAL carried Parts I, II, III, IV, V, VI and VII.

Tuberculin Testing Technic*

JOHN C. PARSONS, M.D., Des Moines

Tuberculin testing by the Mantoux method requires very little equipment. One should have a one cubic centimeter tuberculin syringe, which is regularly graduated in both 0.1 and 0.01 cubic centimeter divisions. A platinum needle (Figure 1) 26 gauge and one-half inch in length is the



Fig. 1.

ultimate in equipment, but an ordinary stainless steel needle of the same dimensions is perfectly acceptable.

The tuberculin which is injected may be either the purified protein derivative (Figure 2) or the

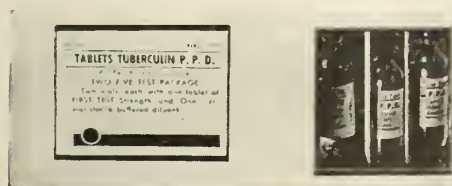


Fig. 2.

more familiar old tuberculin. Purified protein derivative is available only from two commercial firms, Parke, Davis and Company and Sharp and Dohme. It comes in two strengths, the first strength being tablets of such size that when the diluent is added and the tablet dissolved, 0.1 cubic centimeter of the solution contains 0.00002 milligrams. The second strength affords 0.005 milligrams in 0.1 cubic centimeter of solution, or 250 times the strength of the first dose. The tablets are obtainable in test packages of five, ten, twenty, 100 and 500.

It is claimed that purified protein derivative gives more uniform reactions than those obtained with old tuberculin. However, old tuberculin is being furnished free by the State Department of Health, and so far, purified protein derivative has been fairly expensive because of the fact that no single dose packages have been available. After dilution, the solution of purified protein derivative should be used within twenty-four hours, whereas the old tuberculin as furnished by the State Department of Health, retains its strength for about

a week, and possibly slightly longer under optimal conditions.

The needle which is used should be inspected for sharpness (Figure 3), since a sharp needle is practically always painless when used in the intradermal test. The needle may be flamed if it is made of platinum (Figure 4), or boiled if of stainless steel. It is preferable to use one syringe only for tuberculin and for nothing else. Evidence has been presented in the literature to show that a syringe which had been used for tuberculin caused a false positive reaction when it was used later in giving a

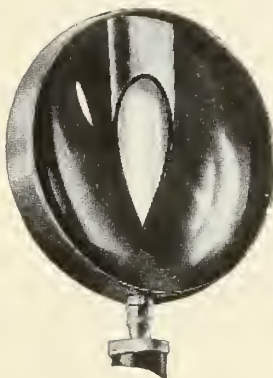


Fig. 3.

Schick test, due to the retained tuberculo-proteins.

If purified protein derivative is used, the solutions are easily made. The tops of the vial containing the sterile buffered saline solution and the vial containing the tuberculin tablet are sterilized and the saline diluent is then drawn into the



Fig. 4.



Fig. 5.

syringe through the needle which has been plunged through the rubber cap of the vial. (Figure 5.) The saline is then injected by the same means into the tuberculin vial and the tablet dissolved. (Figure 6.) In using old tuberculin the tuberculin is merely withdrawn into the syringe from the rubber stoppered vial, after the rubber cap has been sterilized (usually with alcohol).

In making the injection the flexor surface of the forearm is usually selected, although sometimes women prefer the thigh. In such a case the injection is made just above the knee and slightly mesial to avoid the rubbing of dresses. The skin should be cleansed with 95 per cent alcohol. (Figure 7.) The needle is



Fig. 6.

*Editor's Note: This article was especially prepared by Dr. Parsons at our request. We believe it will prove interesting and valuable to members of the profession in the state. Cuts reproduced by courtesy of the National Tuberculosis Association.

then inserted intradermally, being parallel with the skin and the opening of the needle facing up. (Figure 8.) If properly done, the needle enters between the layers of the skin, the epidermis or scarf skin being the only layer of the skin overlying the needle opening. (Figures 9 and 10.) The proper dose of tuberculin is then injected.



Fig. 7.

If this is done correctly a small white bleb will appear over the needle point. (Figure 11.) If the injection has been made subcutaneously, no



Fig. 8.

local reaction may appear and a general febrile reaction may result.

The test should be read or interpreted in forty-eight hours. In some cases a seventy-two hour interval may be selected, and shows practically the same reaction as that seen at forty-eight hours. Redness without any edema or swelling is of little significance. A negative reaction will show no swelling, usually no, or at least very little, redness, and no tenderness. (Figure 12.) A positive reaction shows edema, which may be small enough not to show if the lesion is held in profile, but may be felt by passing the examining finger over the area. (Figure 13.) It is generally

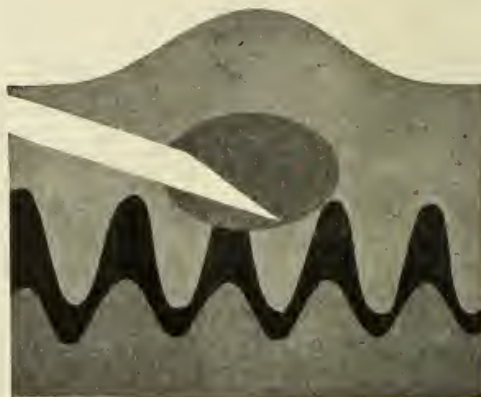


Fig. 9.

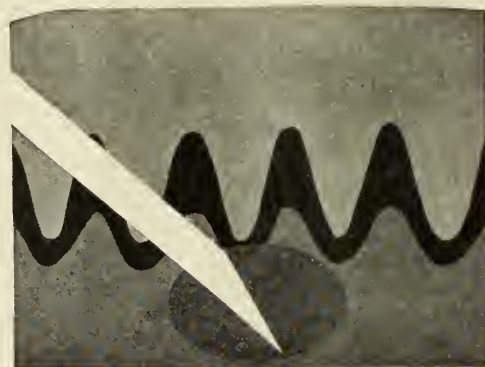


Fig. 10.



Fig. 11.

In the use of purified protein derivative the first strength dose should always be used first. If the reaction is negative then the second strength dose should be injected. When using old tuberculin the first dose in young children should not be over 0.1 milligram. The State Department of Health furnishes old tuberculin in one per cent dilution, which means that 0.1



Fig. 12.



Fig. 13.

cubic centimeter contains one milligram. Therefore before using this old tuberculin in young children it should be diluted to one-tenth of its former strength with sterile salt solution. The usual dose of old tuberculin advised for older children and adults in this state is one milligram (0.1 cubic centimeter) intradermally.

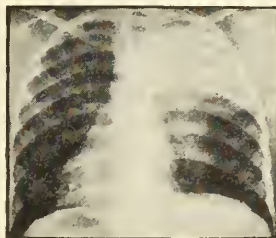


Fig. 14.

It should be remembered that sensitivity to tuberculin may be absent in acute miliary or far advanced generalized tuberculosis, and in some acute infectious diseases such as measles and whooping cough. Positive reactors should have a chest x-ray in order to ascertain whether the positive test has been due merely to a primary tuberculous infection or to actual pulmonary disease. (Figure 14.)

SUMMARY

1. Sterilize needle and syringe.
2. Sterilize caps of vials (and make dilution in case of purified protein derivative) and withdraw solution into syringe.
3. Sterilize skin with alcohol and insert needle into the skin, not under the skin.
4. Inject the proper dose, and make sure the tuberculin is placed between skin layers.
5. Read test in forty-eight hours.

HOBBY EXHIBIT AT ANNUAL SESSION

Since the announcement last month in the JOURNAL that there would be an exhibit of doctors' hobbies at the annual session in May, several requests have been received. We hope to have enough space so that all who wish may display samples of their special hobbies. This exhibit should prove most interesting and worthwhile. Arrangements should, however, be made immediately. Mats, mountings, and tables will be provided, but exhibitors will be expected to pay for the transportation of their exhibits, and any unusual expense involved. The chairman in charge of this activity is Dr. J. M. Bruner, and he can be addressed at the central office, 505 Bankers Trust Building, in Des Moines, Iowa.

WASHINGTON CONFERENCE ON BETTER CARE FOR MOTHERS AND BABIES

More than twelve thousand mothers died in 1936 in the United States as a result of pregnancy, the exact total being 12,182. In 1935 the number of mothers dying from this cause was 12,544. During the twenty-two years for which records are available, the maternal mortality rate has shown only a slight decrease in spite of remarkable advances in medical knowledge and skill. Inquiry into the cause of death of these mothers in 1936 shows that 4,606 (38 per cent) died from septicemia, one-third dying from infection following abortion; 2,481 (20 per cent) died following abortions; 2,784 (23 per cent) died from toxemia; and 1,398 (eleven per cent) died from hemorrhage. Conservative estimates by competent medical authorities indicate that at least one-half of these deaths were the result of conditions that need not have ended fatally.

The number of babies born dead in 1935 was 77,119. In the same year 69,834 babies died in the first month of life; 56,262 died as a result of causes arising during pregnancy or at the time of delivery. Again, in the twenty-two years for which records are available, while the total infant mortality rate has declined brilliantly, the neonatal mortality rate has not materially decreased, and deaths on the first day of life have not been reduced whatsoever. Nearly one-half of the deaths in the first month of life are due to premature birth. Evidence is available which justifies the conclusion that the neonatal mortality rate is at least twice as high as it should be.

Altogether the total number of deaths of mothers, stillbirths, and deaths of babies in the first month of life amounted to approximately 150,000 in the year 1935. Some 35,000 children were left motherless, and the number of mothers injured in health, and children handicapped in growth and development as the result of conditions arising in maternity remains undetermined.

Of the more than 2,000,000 births which occur annually in the United States, approximately 840,000 take place in families who are on relief or have total incomes of less than \$750.00 a year. Women in 1936 who were attended by midwives numbered 223,000; while 15,000 women had neither midwife nor physician. Fourteen per cent of the women living in rural areas were delivered in hospitals, while 71 per cent living in cities and small towns were delivered in hospitals. In the majority of the 1,000,000 home deliveries no nurse was available to aid in caring for the mother and the child. Recent mortality studies conducted in various states and cities (New York, Philadel-

phia, South Carolina, Alabama and Michigan) reveal a high percentage of mothers dying in childbirth with no prenatal care, or with inadequate care. In some areas there is an actual lack of physicians and in many others the number of physicians adequately trained in obstetrics and pediatrics are far too few. Educational facilities for training in obstetrics, both undergraduate and postgraduate, are considered inadequate to meet the demonstrated need. Hospital facilities, particularly in rural areas, are woefully deficient. It is estimated that 10,000,000 people in the United States live thirty miles or more from a hospital. Nursing service, too, is insufficient in at least two-thirds of the counties of the states.

Finally there is the problem that the birth rate is greatest in the areas where the per capita income is the least. For instance, in 1935, fourteen per cent of all live births occurred in the six most prosperous states, which received 27 per cent of the total income. Fourteen per cent of all live births occurred in the six poorest states which received only five per cent of the total income. Furthermore the total birth rate in the United States is gradually declining. The conservation and safeguarding of maternal and infant lives thus become matters of considerable significance in the continuance and vigor of American civilization.

On the basis of the above facts, and upon the recommendation of several professional and lay advisory committees, Miss Katherine F. Lenroot, Chief of the Childrens' Bureau of the United States Department of Labor, called a conference to Washington on January 17 and 18, "to consider the existing resources for the care of mothers and newborn infants in the United States, the extent to which maternal and infant mortality may be reduced, the measures successfully undertaken in certain localities and among certain groups, and the ways by which such services may be made everywhere available." Some five hundred delegates representing 86 national professional and lay organizations assembled in Washington to participate in and listen to the discussions presented and to take home to their respective organizations the findings and recommendations of the conference.

Appearing on the program were such nationally known persons as Secretary of Labor Perkins, Mayor LaGuardia of New York, Thomas Parran, Jr., Surgeon General, United States Public Health Service, Mordecai Ezekiel, economic advisor to the Secretary of Agriculture, Mr. James Roosevelt, Josephine Roche, and Mrs. J. K. Pettengill, National President of the Parent-Teacher Association. The medical profession was generously rep-

resented on the program by obstetricians, pediatricians and public health physicians. The objective of the conference was to bring out and enlarge upon the essential facts listed above; to assay the present economic, professional and community resources of the country in their ability to meet the need for what was considered to be good care for all mothers and babies; to demonstrate what is actually being done in certain localities today; and finally to indicate what has to be done to extend adequate services to all parts of the nation. Special mention should be made of the fact that Miss Ruby Brouillette, public health nurse, discussed at one of the sessions her work in the demonstration center in Washington County, Iowa, which is under the direction of Dr. C. A. Boice.

The work of the conference was summed up in several committee reports. The Committee on Resources of Citizens' Groups recommended that provision be made for a continuing committee whose function would be, among other things, to consider the legislation which may be deemed necessary to advance the work, and when such legislation has been prepared, to provide a means through which organizations endorsing the legislation may act in supporting the measure.

The Committee on Professional Resources found that in order to provide competent maternal care for the mothers in the United States and further to reduce infant and maternal mortality rates, "The services of qualified physicians must be made available by the community for all women unable to obtain them unaided. Appropriation of public funds to pay these physicians for their services will be necessary." Quoting directly from the Committee's report:

"This committee is of the opinion that facilities should be provided for the adequate training of obstetric nurses for service in areas where a medical service is not available. The services of consultant physicians specially trained in obstetrics and pediatrics must be made available for all patients in need of their services. A list of the diplomates of the American boards for obstetrics and for pediatrics and of others equally qualified to act as consultants should be made available to physicians in every state, and the cost for the consultant services of these men when patients are unable to pay should be paid from public funds.

"There should be made available increased and improved educational facilities. These educational facilities should be utilized not only for the training of physicians and nurses, but also for nutritionists, social workers, and others rendering service in this field. Medical schools should recognize the need for improved teaching of the sound basic fundamentals of obstetric practice. Increased facilities for clinical training of undergraduate and graduate students must be made available either by increased use of existing facilities or the development of additional clinical teaching centers.

"Every effort must be made by the obstetric specialists and those interested in maternal welfare in

the United States to reduce the number of unnecessary or ill-advised obstetric operations which play such an important part in maternal mortality. No major obstetric operation should be performed without previous consultation by an obstetric specialist. Hospital care when indicated must be made possible, and the safety of maternal care insured for mothers and infants through provision of proper facilities for care and of adequately trained personnel. More adequate facilities and better-trained personnel to care for newborn infants, especially those prematurely born, must be made available. The provision of equipment and trained personnel to care for premature infants in hospitals located throughout each state will be necessary in order to reduce the high death rate of these infants at the present time.

The Committee on Community Resources recommended the following:

1. Additional funds should be provided so that properly qualified professional public health personnel can be secured in each state and additional training and experience given when necessary.

2. Resources should be made available so that qualified local physicians and specialists may be paid for their services to mothers and infants.

3. Provisions should be made for an increased number of hospital beds for maternity care in certain areas of the country and resources to permit the hospitalization of women for whom such care is indicated.

4. The present number of public health nurses is far below that necessary to insure good maternity care and care of newborn infants. The deficiency in rural areas is more than twice as great as the deficiency in cities. If nursing care of the maternity patient at delivery is to be provided, there must be an increase over the number of nurses provided for general public health nursing activities, including maternal and child health work.

The report of the Findings Committee was presented by the chairman, Dr. Fred L. Adair, of Chicago. Space does not permit the inclusion of the full report, but significant excerpts are as follows:

"It has been repeatedly demonstrated that the application of medical knowledge and professional skill can save the lives of mothers and babies. Community resources, both public and private, can be organized to make such knowledge and skill available when needed. It is known that:

1. Preconceptional and premarital care will help to safeguard the mother from possible later disaster.

2. Good prenatal care will reduce the deaths of mothers from toxemia and will mean fewer deaths of infants.

3. Good medical and nursing care and good technic at the time of delivery and the opportunity for good hospital care when needed will to a large extent prevent or control sepsis and hemorrhage which endanger the life of the mother.

4. Skillful care at birth will increase the child's chance to live and develop normally, and will to a large extent prevent injuries which result in serious handicaps.

5. Adequate postpartum care and follow up of the mother will protect her from unnecessary disability and even death. It will also enable her to nurse and give better care to her baby."

Especial attention was directed to the following conditions favorable to preserving the lives and health of mothers and newborn infants: parents who are well informed and provided with proper food, rest and living conditions; cooperation of the father who helps the mother to carry out good health measures during the childbearing period; adequate medical and nursing supervision and care during pregnancy, labor, and the postpartum and postnatal periods; breast feeding followed by proper and sufficient food, and an environment free from infection; periodic examination and advice by a physician trained in care and feeding of the infant; hospital care for illnesses necessitating treatment not available in the home; consultation services of a specialist as needed; and good hospital care when indicated by medical need or inadequate home facilities. As a final recommendation this Committee further reported that "preserving the lives and health of mothers and babies is of such importance to all the people that it warrants immediate and concerted national consideration and national action."

"The committee finds that if this plan of action is to be carried out, Federal participation would be necessary as follows:

Amendment to Title V, section 502, of the Social Security Act to authorize a larger sum to be appropriated annually to the States for maternal and child-health services with provision that the increased payments to the States should be used for the improvement of maternal care and care of newborn infants."

The JOURNAL presents this somewhat detailed account of the Washington Conference on Better Care for Mothers and Babies without further comment. We believe it will interest our readers, and point out a very significant trend in the times.

PHYSICIANS SERVICES FOR LAY GROUPS

Considerable agitation has arisen in medical circles in various parts of the state because of demands from many quarters for physicians to render their services at greatly reduced rates, or even gratuitously. The conviction is growing that remuneration should be received for these medical services, regardless of the stratum of society in which the services are given.

It is unnecessary to discuss in detail the demands made upon the medical profession for the care of the indigent and the low income groups. Physicians throughout the state and nation are trying to develop some satisfactory plan for rendering medical care to these groups, and increasing attention is being directed toward a solution of this problem. In addition, however, there are

demands made almost daily by lay organizations whose programs usually foster some philanthropic objective. These programs include mass immunization of the children in the community, baby health contests, and infant feeding clinics. The Summer Round-Ups and the 4-H Club physical examinations are others which might be singled out for a few special comments.

The JOURNAL believes the entire medical profession is in hearty sympathy with the professed objectives of the organizations sponsoring these two activities; and yet, as they are conducted today, one wonders if much of their effectiveness is not being lost. The rapid examination of groups of children in school buildings does not permit a sufficiently detailed consideration of the problems of each individual child to justify the conclusion that the child has received a satisfactory "health examination." Such examinations should be conducted in the offices of the family physician in the presence of one or both parents, so that an opportunity may be afforded for questions and answers between parent and physician concerning all aspects of the child's health status. Such a procedure may uncover conditions which will require special methods of examination. In this respect attention need only be called to those instances in which some member of the family has tuberculosis. The tuberculin test will determine whether or not the child has been infected. In other instances examination of the blood to determine the presence of anemia, or of the urine to determine symptoms of diabetes or kidney disease may be indicated. Most important of all, an opportunity is given for the physician to impress upon the family the necessity for the correction of discovered defects, and this, after all, is the purpose of the Summer Round-Ups and the 4-H Club examinations; an opportunity which too frequently is not possible when the examinations are conducted by the group method.

In the opinion of the JOURNAL a situation exists which merits immediate and frank consideration by our medical organization to the end that some policy may be formulated which will be satisfactory to all parties concerned. We believe that immunizations and examinations carried on as group projects sponsored by lay organizations should be performed in the physicians' offices because in this manner the patient may be assured of the best type of medical service. Furthermore, we believe the physician is entitled to be paid for his work. Obviously special arrangements may be necessary to establish fee schedules for people in varying economic levels. However, county medical societies must be careful not to adopt the short-sighted

policy of appearing to refuse to cooperate with lay organizations interested in health activities. Such an attitude reacts unfavorably upon the medical profession as a whole. Rather the county medical society, through its properly chosen representatives, should point out the way in which the best results may be secured and yet be in accord with the principles of recognized medical ethics.

Already the Committee on Child Health and Protection has made a start toward the development of a better understanding by holding a conference with the leaders of the Summer Round-Ups and the 4-H Clubs. The promulgation of a statewide policy acceptable both to physicians and lay groups should be a goal readily attainable. We are sure that once this goal is attained, it will be a source of considerable satisfaction to both groups. It is entirely within the realm of possibility to conduct this phase of the physician's practice on a sound equitable business-like basis, and the sooner this can be accomplished the better it will be for all concerned.

INCOME TAX RETURNS

Income tax returns are due in March, and a brief re-statement of the regulations is given at this time in order to help new physicians who are making out returns for the first time, and to refresh the memory of those who have reported in previous years. A more detailed explanation of the federal tax is given in the January 29 issue of the *Journal* of the American Medical Association.

Federal

Federal income tax returns are due on or before March 15. Those liable for making returns are single persons with a net income of \$1,000 or over, married couples with a net income of \$2,500 or over, and all individuals with a gross income of \$5,000 or more in 1937. Failure to receive a form does not relieve the individual of responsibility for filing a return. The tax is paid on gross income less allowable deductions, exemptions and earned income credit. A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered, plus money he has received as profits, from investments and speculation, or as compensation and profits from other sources.

From this gross income the physician may subtract allowable deductions. Under this are included all current expenses necessary in carrying on his practice, such as office rent, office maintenance, supplies (dressings, drugs, chemicals, professional journals, and professional books, furniture, or instruments which have a useful life of

less than one year), dues to medical societies, travel expense incurred in attending patients or medical meetings (but not for attending postgraduate courses), automobile expense incurred in the practice of his profession, and the usual deductions such as general property taxes, state income tax for 1937, Iowa sales tax, contributions to church and organized charity, and interest on indebtedness. These deductions are explained on the forms. Depreciation may be charged on equipment used over a period of years, but must not be more each year than is necessary to cover the actual depreciation.

The net income figure is obtained by subtracting the allowable deductions from the gross income. Of this net income, the physician is allowed a credit of ten per cent of the earned net income provided the net income is not over \$14,000. If the net income is less than \$3,000, the physician may deduct ten per cent of the net income regardless of whether it is earned income. In addition he is allowed an exemption of \$1,000 if unmarried, \$2,500 if married and living with his wife, and \$400 for each dependent. This figure, plus the earned income credit, is deducted from the net income, and the tax figured on the balance. Rates for computing the tax are set forth on the forms, and are roughly four per cent on net incomes up to \$4,000. Above that figure, a surtax is imposed.

State

State income tax returns are due on or before March 31. Those responsible for making returns are single persons with a net income of \$1,000 or more, married couples with net income of \$1,500 or more, and all individuals with a gross income of \$3,000 or more in 1937. Tax is paid on gross income less allowable deductions. Gross income includes the money received by the physician for services rendered, plus such money as he may receive from investments and speculation, and other sources. If payments are made for services rendered prior to 1934, such payments should not be included, because income for years prior to 1934 is not taxable. Physicians may compute tax on either a cash basis or accrual basis, depending upon the actual method used in keeping accounts.

Allowable deductions for physicians include professional expenses and the usual deductions authorized by law, such as general property taxes, federal income tax for 1937, sales tax, contributions to church and organized charity, interest on indebtedness, etc. These deductions are explained on the form. Under professional expenses may be included, the cost of supplies used in practice,

automobile expense incurred in making professional calls, dues to professional societies, subscriptions to professional journals, office rent and maintenance. Travel expense incurred in attending professional conventions and postgraduate courses may not be deducted. These allowable deductions may be subtracted from the gross income to give the net income figure. The tax rate is given on the forms and is briefly, one per cent on the first \$1,000, two per cent on the second \$1,000, etc. On \$4,000 and higher incomes five per cent tax is paid. From the tax as figured, a deduction of \$10 may be made for a single person, \$20 for a married couple, and \$5 for each dependent. A change in the Iowa income tax law makes individuals who rent property from persons residing outside of the state liable for collection of the tax due the state.

Two items which may be deducted on both the federal and state tax returns are, first, the three cent gasoline tax on gasoline used for pleasure, and second, social security taxes paid on those persons in the physician's employ. It must be remembered that in computing both the federal and state tax, the burden of proof is on the taxpayer. He must keep accurate records to show he is entitled to the deductions claimed. In cases where his office is included in his residence, he is entitled to deduct only that portion of the rent which would be charged to the office. This is true also in regard to automobile expense; only that expense incurred in professional practice is deductible.

NORTHWEST MEDICAL CONFERENCE

Many physicians in Iowa have attended meetings of the Northwest Medical Conference in the past several years, but for those who are not familiar with this assembly, it may be stated briefly that the conference was organized several years ago to afford the physicians in this section of the country an opportunity to gather and discuss vital problems affecting the medical profession. Medical ethics, medical economics, and postgraduate education are subjects which have aroused much interest.

Originating with a small meeting in St. Paul, the Conference has now been enlarged to include physicians from Montana, Wyoming, North and South Dakota, Colorado, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, and Ohio. Because of the fact that Chicago seems to be a central location for representatives from these states, the assembly has been held there for the past two years, with various state societies entertaining the group. Last year the Iowa State Medical Society acted as host society, while this year the Indiana State Medical Association assumes that rôle.

The Conference is to be held in the Palmer House, in Chicago, on Sunday, February 13. Officers and members of the above named state medical societies are welcome to attend, and it is hoped that there will be a large number present from Iowa.

The officers of the Conference, Dr. R. L. Sensenich of South Bend, President, and Dr. C. F. Vohs of St. Louis, Secretary, have arranged the following program:

8:30 a. m. Breakfast

(Club Dining Room, Palmer House)

9:30 a. m. Registration

10:00 a. m. Morning Session (Room Number 14)

Symposium: "Medical Care for All the People"

1. Preventive Medical Care as an Activity of County Medical Societies

Herman M. Baker, M.D., Evansville, Indiana, President, Indiana State Medical Association.

2. Rural Medical Care in Wisconsin

Raymond G. Arveson, M.D., Frederic, Wisconsin.

3. Physical Rehabilitation of the Indigent

Mr. Joe W. Savage, Charleston, West Virginia, Executive Secretary, West Virginia State Medical Association.

4. Oakland County Medical Plan

R. G. Tuck, M.D., Pontiac, Michigan.

5. Group Hospitalization in Saint Louis

Carl F. Vohs, M.D., St. Louis, Missouri.

1:00 p. m. Luncheon (Club Dining Room)

Indiana State Medical Association will be host to the Conference.

Report of the Year

R. L. Sensenich, M.D., South Bend, Indiana.

Election of Officers for 1939.

Selection of Meeting Place and Time of Meeting.

Introduction of Guests.

2:00 p. m. Afternoon Session

Symposium: "Medical Care for All the People"

1. The American Medical Association

R. G. Leland, M.D., Chicago, Illinois, Director, Bureau of Medical Economics, American Medical Association.

2. The State Medical Association

Ernest E. Shaw, M.D., Indianola, Iowa.

3. The County Medical Society (Sedgwick County)

Mr. Jack Austin, Wichita, Kansas, Executive Secretary, Sedgwick County Medical Society.

The problem of medical care for all of the people is one which is being discussed very widely, and this symposium should bring forth many methods of approaching the problem which will be helpful in leading to solution for individual communities. All physicians whose duty it is to formulate policies for the care of the indigent or low income group should plan to attend the conference so that they may carry back to their society the benefits of this round table discussion.

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES

The Speakers Bureau will conduct five postgraduate courses this spring. They are to be held in Council Bluffs, Rockwell City, Clinton, Iowa City and Marshalltown. The latter course will be presented on a monthly basis, beginning February 1 and continuing on the first Tuesday of each month, with the exceptions of July and August, for eight consecutive months. The courses held in Council Bluffs and Iowa City will run for eight weeks, while the Clinton course will close at the end of five successive meetings.

The fee for the courses at Council Bluffs and Rockwell City will be \$10.00, and a fee of \$5.00 will be charged for the Iowa City and Clinton courses. The Marshalltown course will be conducted on an invitation basis by the Marshall, Hardin, Tama and Grundy county societies who are sponsoring the course. Tentative outlines are submitted below and letters will be circularized in the near future giving final information as to dates, meeting places and hours. For further information regarding any of the programs, please communicate with the secretary listed at each center, or write the Speakers Bureau.

Endocrinology and Metabolism S. D. Maiden, M.D., Secretary Council Bluffs—Mondays Opens February 28

Vitamins and Their Clinical Significance, A. C. Ivy, M.D., Chicago.
Obesity and Its Modern Treatment, C. J. Barborka, M.D., Chicago.
Endocrine Therapy, A. A. Werner, M.D., St. Louis.
Sex Hormones in Health and Disease, Fred C. Koch, Ph.D., Chicago.
Modern Treatment of Hypertension, R. W. Scott, M.D., Cleveland.
Dermatology, Ruben Nomland, M.D., Iowa City.
Modern Treatment of Diabetes, W. D. Paul, M.D., Iowa City.
*The Goiter Problem, S. F. Haines, M.D., Rochester;
John Pemberton, M.D., Rochester.

What the General Practitioner Should Know About the Specialties P. W. Van Metre, M.D., Secretary Rockwell City—Tuesdays Opens March 1

Pediatrics (to be announced).
Neurology, H. B. Hannah, M.D., Minneapolis.
Urology, Wm. F. Braasch, M.D., Rochester.
Surgery, James T. Priestley, M.D., Rochester.
Obstetrics, O. H. Schwartz, M.D., St. Louis.
Dermatology, Ruben Nomland, M.D., Iowa City.
*The Internist, Wm. S. Middleton, M.D., Madison.
*Eye, Ear, Nose and Throat, L. W. Dean, M.D., St. Louis.

General Therapeutics W. M. Walliker, M.D., Secretary Clinton—Thursdays Opens March 10

{ Modern Treatment of Diabetes, E. B. Winnett, M.D., Des Moines.
Clinical Electrocardiography, D. J. Glomset, M.D., Des Moines.
*Practical Lecture on Skin Diseases, S. W. Becker, M.D., Chicago.
*Head Infections, T. E. Walsh, M.D., Chicago.

* Tentative.

New and Unofficial Remedies, Hugh A. McGuigan, M.D., Chicago.

Infections of the Gallbladder and Gallbladder Tract, H. K. Gray, M.D., Rochester; James F. Weir, M.D., Rochester.

University Course W. M. Fowler, M.D., Secretary Iowa City—Tuesdays Opens March 15

Symposium on Malignancies
H. D. Kerr, M.D., Chairman

1:00 p.m. Leukemia and Lymphoma, W. M. Fowler, M.D.
1:30 p.m. Carcinoma of the Colon and Rectum, Frank Peterson, M.D.
2:00 p.m. Carcinoma of the Uterus, E. D. Plass, M.D.
2:30 p.m. Carcinoma of the Bladder and Prostate, N. G. Alcock, M.D.
3:00 p.m. Intermission.
3:30 p.m. Carcinoma of the Oral Pharynx and Larynx, D. M. Lierle, M.D.
4:00 p.m. Tumors of the Brain and Cord, O. R. Hyndman, M.D.
4:30 p.m. Carcinoma of the Skin, R. Nomland, M.D.
5:00 p.m. Irradiation in Relation to the Above Conditions, H. D. Kerr, M.D.

March 22, 1938

Symposium on Gonorrhea
N. G. Alcock, M.D., Chairman

1:00 p.m. Gonorrheal Infection in the Male, N. G. Alcock, M.D.
1:30 p.m. Lower Tract Gonorrhea in the Female, E. D. Plass, M.D.
2:10 p.m. Gonorrheal Infection in the Eye, C. S. O'Brien, M.D.
2:40 p.m. Gonorrheal Arthritis, J. A. Greene, M.D.
3:00 p.m. Intermission.
3:30 p.m. Syphilis Clinic—
R. Nomland, M.D., Chairman.
P. C. Jeans, M.D.
C. Van Epps, M.D.
H. M. Korn, M.D.

March 29, 1938

1:00 p.m. Diagnostic and Therapeutic Clinic, Arthur Steindler, M.D.
2:00 p.m. Panel Section on Gastro-intestinal Diseases—
Frank Peterson, M.D., Chairman.
F. M. Smith, M.D.
D. M. Lierle, M.D.
P. C. Jeans, M.D.
H. D. Kerr, M.D.
4:30 p.m. Treatment of Pneumonia, H. M. Korn, M.D.
5:00 p.m. Medical Diagnosis and Loss of Vision, C. S. O'Brien, M.D.

April 5, 1938

1:00 p.m. Diagnostic and Therapeutic Clinic, F. M. Smith, M.D.
Symposium on Tuberculosis
F. M. Smith, M.D., Chairman
2:00 p.m. Childhood Tuberculosis, J. D. Boyd, M.D.
2:35 p.m. The Diagnosis and Treatment of Early Pulmonary Tuberculosis in the Adult, J. H. Peck, M.D.
3:05 p.m. Intermission.
3:30 p.m. Management of the Pregnant Tuberculous Woman, E. D. Plass, M.D.

- 4:00 p.m. Indications and Contraindications for Surgical Treatment of Pulmonary Tuberculosis, A. Ames, M.D.
 4:20 p.m. Renal Tuberculosis, N. G. Alcock, M.D.
 4:40 p.m. Surgical Indications in Bone and Joint Tuberculosis, A. Steindler, M.D.
 5:00 p.m. R. E. Neff.

April 12, 1938

- 1:00 p.m. Surgical Clinic, Frank Peterson, M.D.
 Symposium on Back Pain
 A. Steindler, M.D., Chairman
 2:00 p.m. Differential Diagnosis of Back Pain, A. Steindler, M.D.
 2:30 p.m. Relationship of Sacro-iliac Strain to Menstruation and Pregnancy, E. D. Plass, M.D.
 3:00 p.m. Intermission.
 3:30 p.m. Diagnosis of Low Back Pain in Medical Practice, J. A. Greene, M.D.
 4:00 p.m. Sciatic Syndrome, C. Van Epps, M.D.
 4:30 p.m. The More Common Urological Causes of Pain in the Back, N. G. Alcock, M.D.
 5:00 p.m. The Art and Practice of Psychiatry in General Medical Practice, A. H. Woods, M.D.

April 19, 1938

- 1:00 p.m. Pediatrics Clinic: Demonstration of Diagnostic and Therapeutic Procedures, P. C. Jeans, M.D., and R. L. Jackson, M.D.
 Symposium on the Crippled Child
 2:00 p.m. General Discussion, P. C. Jeans, M.D.
 2:30 p.m. Home Care of Crippled Children, A. Steindler, M.D.
 3:00 p.m. Birth Injuries, E. D. Plass, M.D.
 3:30 p.m. Intermission.
 4:00 p.m. Cleft Palate and Speech, D. M. Lierle, M.D.
 4:20 p.m. Squint and Its Effect on the Child, C. S. O'Brien, M.D.
 4:40 p.m. Orthodontia, L. A. Higley, D.D.S.
 5:00 p.m. The State Program for the Crippled Child, E. M. MacEwen, M.D.

April 26, 1938

- 1:00 p.m. Obstetrics and Gynecology Clinic, E. D. Plass, M.D.
 Symposium on Infection
 D. M. Lierle, M.D., Chairman
 2:00 p.m. Diagnosis and Treatment of Acute Sinusitis, Otitis Media and Mastoiditis, D. M. Lierle, M.D.
 2:30 p.m. Brain Abscess and Meningitis as Complications of Mastoiditis, C. Van Epps, M.D.
 3:00 p.m. Upper Respiratory Infections and Their Effect Upon the Child, J. D. Boyd, M.D.
 3:30 p.m. Intermission.
 4:00 p.m. Pelvic Infections, E. D. Plass, M.D.
 4:30 p.m. Diagnosis and Treatment of Blood Stream Infections, W. M. Fowler, M.D.
 5:00 p.m. Infections of the Genito-Urinary Tract, N. G. Alcock, M.D.
 5:15 p.m. Diagnosis and Treatment of Conjunctivitis, C. S. O'Brien, M.D.

May 3, 1938

- 1:00 p.m. Urology Clinic, N. G. Alcock, M.D.
 Symposium on Headache
 C. Van Epps, M.D., Chairman
 2:00 p.m. Headache in Migraine and Brain Tumor, C. Van Epps, M.D.
 2:30 p.m. Diagnosis of Ocular Headache, C. S. O'Brien, M.D.
 3:00 p.m. The Relation of Sinus Disease to Headache, D. M. Lierle, M.D.
 3:30 p.m. Intermission.
 4:00 p.m. Dermatology Clinic, R. Nomland, M.D.
 4:45 p.m. Fracture Clinic, Frank Peterson, M.D.

Some Practical Applications of New Medical Knowledge

R. S. Grossman, M.D., Secretary

Marshalltown—First Tuesday in Month
 Opens February 1

- Heart, Fred Smith, M.D., Iowa City.
 The Modern Treatment of Anemia, F. J. Heck, M.D., Rochester.
 Clinical Laboratory, T. B. Macgath, M.D., Rochester.
 Clinical Electrocardiology, A. R. Barnes, M.D., Rochester.
 Neurology, H. W. F. Woltman, M.D., Rochester.
 Endocrinology, E. L. Sevringhaus, M.D., Madison.
 *Physical Therapy, John S. Coulter, M.D., Chicago.
 *Fractures, Arthur Steindler, M.D., Iowa City.
 The Influence of Social Changes on Scientific Medicine, A. W. Adson, M.D., Rochester.

* Tentative.

"REFRESHER" COURSES

A tentative outline is given below of the "refresher" courses in pediatrics and obstetrics to be conducted again this spring by the Speakers Bureau, through the cooperation of the faculty of the College of Medicine of the State University of Iowa, the Iowa Pediatric Club, the Central Association of Obstetricians and Gynecologists and the State Department of Health.

Six of these courses will be presented in the state, four of them at Storm Lake, Creston, Grinnell and Clarion. There will be eight two-hour lectures, four on pediatrics and four on obstetrics. The lectures in obstetrics will be handled by Dr. E. D. Plass of the College of Medicine at the State University of Iowa and his assistants, while various pediatricians throughout Iowa will present the lectures in pediatrics.

The fee for the courses will be \$2.00 and all physicians, nurses and assistants are eligible to register and are urged to do so. Letters will be circularized to all physicians in the vicinity of the centers holding the "refresher" courses containing full information in regard to the dates, locations and speakers.

Obstetrics

- Lecture I A The Therapeutic Use of Endocrine Products in Obstetrics and Gynecology.
 B Sterility.
 Lecture II A Abortion: Cause and Treatment.
 B Ante and Postpartum Hemorrhage.
 Lecture III A Puerperal Infection: Prevention and Treatment.
 B Vaginal Infections: Diagnosis and Treatment.
 Lecture IV A Syphilis in Obstetrics and Gynecology.
 B Immediate Care of the Newborn, Especially the Premature.

Pediatrics

- Lecture V Nutrition in Infants and Children.
 Lecture VI Recent Advances in Serum Therapy in Some Communicable Diseases.
 Lecture VII Convulsions in Infancy and Childhood.
 Lecture VIII Otitis Media and Its Complications in Infancy and Childhood.

RADIO SCHEDULE

WOI and WSUI—Wednesdays at 4:00 p.m.

- February 9 Arthritis, W. E. Wolcott, M.D.
 February 16 Home Influences and Juvenile Delinquencies, F. A. Ely, M.D.
 February 23 Scarlet Fever and Measles, J. F. Gerkin, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. S. E. LINCOLN, 2220 East Thirty-second Street, Des Moines

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

THE WOMAN'S AUXILIARY AND ITS RELATION TO THE WOMEN'S FIELD ARMY

There has been much discussion during the past year as to the relation of the Woman's Auxiliary to the Women's Field Army, and because the two organizations have been confused in physicians' as well as lay persons' minds, a restatement of the personnel of the two groups seems to be in order.

The Woman's Auxiliary to the Iowa State Medical Society is composed of the wives, mothers, sisters and daughters of physicians in the state. Its interests are closely bound to those of the medical profession, and one of its purposes is to bring more clearly before the women the problems which confront the medical profession. The Women's Field Army is an organization sponsored by the American Society for the Control of Cancer and the General Federation of Women's Clubs. The purpose of the organization is to educate the general public on the early danger signals of cancer, and the possibility for cure when a prompt diagnosis is made, and proper and early treatment is given. The Field Army conducts an annual campaign to raise money for carrying on this educational work, at which time women are asked to give \$1.00 to become a member of the Field Army. Of the money so raised, seventy per cent remains in the state to further the work, and thirty per cent is sent to the American Society for the Control of Cancer, to be expended by it as it sees fit.

When the Women's Field Army was organized, Dr. F. L. Rector of the American Society for the Control of Cancer, and Mrs. Carl W. Illig, Jr., Public Health Chairman for the General Federation of Women's Clubs and special representative of the American Society for the Control of Cancer, outlined plans for the organization of an Iowa Division of the Women's Field Army for the Control of Cancer. This plan was approved by members of the Executive Cancer Committee of the Iowa State Medical Society and representatives from various interested lay groups.

At no time was the opinion expressed that the Women's Field Army should be allied exclusively with the medical profession. Rather it was felt that its greatest contribution would be through the cooperation of the Federated Women's Clubs in the state. The medical profession, and the Woman's Auxiliary, are interested in the success of the Field Army, and have cooperated in its work. The Iowa State Medical Society has also materially assisted with the educational part of the program, and plans continued activity along this line. The Auxiliary has aided the Women's Field Army in arranging public meetings

at which cancer might be discussed, and the individual members have financially supported the program. However, in the final analysis, the Woman's Auxiliary and the Women's Field Army are separate and distinct organizations, and the members of the Auxiliary join the Field Army as individuals rather than as a group.

NEWS FROM THE NATIONAL AUXILIARY

The January news letter from the National Auxiliary contains interesting articles by the officers of the National Auxiliary and the presidents of State Auxiliaries. We would mention here the emphasis made by Mrs. John Francis Norman, president of the Minnesota Auxiliary, in her article, on the importance of each member becoming well informed on topics pertaining to organized medicine. Quoting from her article, "We continue to urge each individual member to become informed on the problems confronting organized medicine, and suggest as sources of much enlightenment, the Organization Section of the *Journal of the American Medical Association*; *Medical Economics and Auxiliary News in Minnesota Medicine*; *Everybody's Health*, and *Hygeia*. Last but not least, our own news letter could be read with profit by every Auxiliary member in the interests of self-education so as to carry on our public relations work intelligently. It is a well known fact that the influence which a loyal, informed member wields in every organization to which she belongs is beyond estimation."

Our Iowa Auxiliary members may be particularly interested in knowing where to turn for information on some of these medical economic subjects. This same news letter contains the following item: "The Organization Section of the *Journal of the American Medical Association* is devoted to the organizational, business, economic, and social aspects of medical practice, subjects of vital interest to the Auxiliary. May we urge that all articles which are published in this section be read carefully by our members. An index (from July 3, 1937 to December 11, 1937) was published in the regular Index Number of the *Journal*, December 25, 1937. * * * News items from State Auxiliaries also are published from time to time in this section of the *Journal*. State Auxiliary news received by the National Chairman of Press and Publicity from State Chairmen of Press and Publicity is sent, in turn, to Dr. Morris Fishbein, Editor of the *Journal*. After editing this news, Dr. Fishbein publishes it in the Organization Section of the *Journal*, when space permits."

SOCIETY PROCEEDINGS

Buena Vista County Annual Meeting

At the annual meeting of the Buena Vista County Medical Society held at Storm Lake, Friday, December 17, the following officers were elected for 1938: Dr. R. E. Almquist of Albert City, president; Dr. R. E. Maillard of Storm Lake, vice president; Dr. T. R. Campbell of Sioux Rapids, secretary and treasurer; and Dr. M. A. Armstrong of Newell, delegate.

T. R. Campbell, M.D., Secretary

Clayton County Annual Meeting

The Clayton County Medical Society met in Elkader, Thursday, December 9, and elected the following officers for this year: Dr. T. W. Lichter of Edgewood, president; Dr. J. C. Brown of Littleport, vice president; and Dr. P. R. V. Hommel of Elkader, secretary and treasurer.

P. R. V. Hommel, M.D., Secretary

Crawford County Annual Meeting

The annual meeting of the Crawford County Medical Society was held in Denison, Thursday, December 30. Speakers of the evening were Roland B. Morrison, M.D., of Carroll, who showed a film on various surgical technics, and Payson S. Adams, M.D., of Omaha, who delivered an illustrated lecture on Sacral and Caudal Anesthesia. The following officers were named at the business session to head the society for this year; Dr. T. L. Vineyard of Dow City, president; Dr. William H. Schultz of Schleswig, vice president; Dr. J. James Duffy of Denison, secretary and treasurer; Dr. C. L. Sievers of Denison, delegate; and Dr. E. J. Maire of Vail, alternate delegate.

Dallas-Guthrie Society

Members of the Dallas-Guthrie Medical Society met in regular session in Adel, Thursday, January 20, and the following scientific papers were presented: Infections of the Hands, K. W. Diddy, M.D., of Perry; and Septic Sore Throats, George P. Elvidge, M.D., of Perry. Dr. C. I. Thomas of Guthrie Center was elected president of the society to fill the vacancy created by the resignation of Dr. M. J. Donovan of Perry.

Des Moines County

Harold M. Camp, M.D., secretary of the Illinois State Medical Society, was guest speaker for the Des Moines County Medical Society at its regular meeting held in Burlington, Tuesday, January 11. Dr. Camp spoke on Mutual Problems of the Medical and Dental Professions.

Fayette County Annual Meeting

The Fayette County Medical Society met at the Mealy Hotel in Oelwein, Tuesday, January 18. After a six-thirty dinner, the first meeting of the year was held. Order of business was the election of officers, the introduction of one new member, and plans for regular and more interesting meetings. The new officers are as follows: Dr. W. E. Walsh of Hawkeye, president; Dr. J. R. Wood of Wadena, vice president; Dr. H. H. Wolf of Elgin, secretary and treasurer; Dr. Walsh, delegate; and Dr. Howard Risk of Oelwein, alternate delegate. The new member admitted was Dr. W. B. Henderson of Oelwein. The next meeting will be held Wednesday, February 16 at West Union.

H. H. Wolf, M.D., Secretary

Franklin County Annual Meeting

The annual meeting of the Franklin County Medical Society was held Monday, January 3. Election of officers resulted as follows: Dr. W. R. Arthur of Hampton, president; Dr. F. H. Rodemeyer of Sheffield, vice president; Dr. W. L. Randall of Hampton, secretary and treasurer; and Dr. J. F. Martin of Latimer, delegate.

J. M. Burger, M.D., Secretary

Fremont County Annual Meeting

The Fremont County Medical Society met at the Fremont County Farm, Wednesday, January 26, and elected the following officers for 1938: Dr. Ralph Lovelady of Sidney, president; Dr. Kenneth Murchison of Sidney, vice president; Dr. A. E. Wanamaker of Hamburg, secretary and treasurer; Dr. William Kerr of Randolph, delegate; and Dr. B. B. Miller of Tabor, alternate delegate. There was a round table discussion of matters pertaining to the physical welfare of the people of the county.

A. E. Wanamaker, M.D., Secretary

Harrison County Annual Meeting

Recently elected officers of the Harrison County Medical Society are: Dr. H. N. Anderson of Woodbine, president; Dr. Clement W. Byrnes of Dunlap, vice president; Dr. F. H. Hanson of Magnolia, secretary and treasurer. Dr. C. S. Kennedy of Logan, delegate; and Dr. E. J. Cole of Woodbine, alternate delegate.

F. H. Hanson, M.D., Secretary

Iowa County Annual Meeting

Officers of the Iowa County Medical Society were unanimously renamed to serve their society for another year at a meeting held Tuesday, December 28,

in Marengo. They are: Dr. H. G. Moershel of Homestead, president; Dr. Thomas D. Clark of Victor, vice president; Dr. I. J. Sinn of Williamsburg, secretary and treasurer; Dr. F. C. Schadt of Williamsburg, delegate; and Dr. A. C. McKean of Ladora, alternate delegate.

Jackson County Annual Meeting

Officers elected at the annual meeting of the Jackson County Medical Society held Thursday, January 20, are: Dr. O. L. Frank of Maquoketa, president; Dr. R. E. Dwyer of Preston, vice president; and Dr. William Lowder of Maquoketa, secretary and treasurer.

Jasper County

W. Eugene Wolcott, M.D., of Des Moines, was guest speaker for the Jasper County Medical Society at a meeting held at the Skiff Hospital in Newton, Tuesday, January 4. Dr. Wolcott spoke on Fractures Around the Hip.

Johnson County

The Johnson County Medical Society met in regular session Wednesday, January 5. Newly elected officers of the society were installed, after which a short business session was held. The following scientific program was presented: Treatment of Non-union of Femoral Neck Fractures; an analysis of ninety-three cases, T. L. Waring, M.D., of Iowa City; and Disadvantages of Protamine Insulin in the Treatment of Diabetes Mellitus in Children, Robert L. Jackson, M.D., of Iowa City. Discussion was opened by J. A. Greene, M.D.

W. M. Fowler, M.D., Secretary

Monona County Annual Meeting

Walter Scott, M.D., of Sioux City, furnished the scientific program for the Monona County Medical Society at the meeting in Onawa, Tuesday, January 11. Dr. Scott discussed the subject, Fractured Spine Following Automobile Accidents. Officers elected at the business session are: Dr. E. E. Gingles of Onawa, president; Dr. M. O. Stauch of Whiting, vice president; Dr. L. A. Gaukel of Onawa, secretary and treasurer; Dr. S. N. Anderson of Onawa, delegate; and Dr. E. C. Junger of Soldier, alternate delegate.

Montgomery County Annual Meeting

Dr. G. W. Egermayer of Elliott was selected to head the Montgomery County Medical Society during 1938, at the annual election of that organization held in Red Oak, Thursday, January 13. Other officers are: Dr. F. S. Williams of Villisca, vice president; Dr. Oscar Alden of Red Oak, secretary and treasurer; Dr. F. A. Hansen of Stanton, delegate; and Dr. Harold C. Bastron of Red Oak, alternate delegate.

O'Brien County Annual Meeting

The O'Brien County Medical Society met Tuesday, January 11, in Primghar for the annual election of officers, which resulted as follows: Dr. G. E. Vermeer of Sheldon, president; Dr. E. B. Getty of Primghar, vice president; Dr. H. J. Brackney of Sheldon, secretary and treasurer; Dr. W. R. Brock of Sheldon, delegate; and Dr. Vermeer, alternate delegate.

Osceola County Annual Meeting

Dr. Frank Reinsch of Ashton, was elected president of the Osceola County Medical Society at the annual election held in Sibley, Thursday, December 30. Other officers are: Dr. H. W. Schoon of Sibley, vice president; Dr. F. P. Winkler of Sibley, secretary and treasurer; Dr. Calvin C. F. Bosch of Melvin, delegate; and Dr. H. B. Paulsen of Harris, alternate delegate.

Pocahontas County Annual Meeting

The following officers were elected to serve the Pocahontas County Medical Society, at a meeting held in Pocahontas, Friday, January 14: Dr. F. E. Heathman of Pocahontas, president; Dr. G. A. Everson of Rolfe, vice president; Dr. B. A. Smillie of Gilmore City, secretary and treasurer; Dr. W. W. Beam of Rolfe, delegate; and Dr. A. W. Patterson of Fonda, alternate delegate.

B. A. Smillie, M.D., Secretary

Polk County Annual Meeting

The Des Moines Academy of Medicine and Polk County Medical Society met in regular session for the annual meeting, and named Dr. Russell C. Doolittle as president-elect of the organization. Dr. Oran W. King, elected last year, was installed as president of the society for 1938. Dr. N. Boyd Anderson was reelected secretary and treasurer. Delegates and alternate delegates remain the same.

Poweshiek County

The regular meeting of the Poweshiek County Medical Society was held in Grinnell at the Community Hospital, Tuesday, February 1, with W. Eugene Wolcott, M.D., of Des Moines, furnishing the scientific program by presenting a paper on Fractures of the Femur.

Scott County

Disraeli Kobak, M.D., assistant clinical professor of medicine at Rush Medical College, Chicago, was guest speaker for the Scott County Medical Society, Tuesday, January 4. His subject was Physical Therapy.

Union County Annual Meeting

The Union County Medical Society held its annual meeting Friday, December 30, and elected the follow-

ing officers: Dr. A. F. Watts of Creston, president; Dr. C. C. Rambo of Creston, vice president; Dr. Carl E. Sampson of Creston, secretary and treasurer; Dr. C. B. Roe of Afton, delegate; and Dr. A. S. Beatty of Creston, alternate delegate. On Wednesday, January 5, the society met and George Wessels, D. V. M., of Creston, gave a very interesting and instructive talk on The Diseases of Animals and Their Relation to Human Ills.

Carl E. Sampson, M.D., Secretary

Webster County

Members of the Webster County Medical Society and guests of the organization, numbering almost one hundred, assembled in Fort Dodge, Thursday, January 20, for a dinner meeting at the Wahkonsa Hotel. Clifford J. Barborka, M.D., of Chicago, was the speaker of the evening, and presented a lecture on Treatment of Disease by Diet. F. E. Schmidt, M.D., also of Chicago, was an additional guest, giving an illustrated lecture on pneumonia, and the use of the serum treatment.

Woodbury County

The regular meeting of the Woodbury County Medical Society was held Tuesday, January 18, at the West Hotel in Sioux City. The program was as follows: Hypertensive Heart Disease, Chauncy C. Maher, M.D., associate professor of medicine, Northwestern University Medical School, Chicago; and a ten minute case report and discussion on the Anemias of Late Pregnancy, Roy E. Crowder, M.D., of Sioux City.

A special meeting of the society was called for Friday, January 21, when F. E. Schmidt, M.D., of Chicago, and Carl F. Jordan, M.D., of Des Moines, were present to address the group on the Control and Treatment of Pneumonia. A feature of the meeting was the showing of motion pictures made at the Harlem Hospital Center in New York.

W. H. Gibbon, M.D., Secretary

PERSONAL MENTION

Dr. C. Harlan Johnston of Des Moines was guest speaker at a joint meeting of the Boone Rotary Club, Chamber of Commerce, Lions Club, Junior Chamber of Commerce, and Boone County Medical Society. The occasion was the second National Social Hygiene Day, Wednesday, February 2, and Dr. Johnston addressed the group on the methods in controlling social diseases.

Dr. Fred G. Vernon, formerly of Sioux City, has arrived in Jewell, where he will take over the practice of the late Dr. C. J. Christensen.

Dr. George I. Armitage, who was graduated from Northwestern University Medical School in 1937, has located in Murray for the practice of medicine. He is

the son of the late Dr. Armitage who practiced in Murray for more than twenty-five years, and passed away in 1933.

Dr. William F. Crew, formerly of Ottawa, Kansas, is locating in Massena, where he will take over the practice of the late Dr. H. H. Penquite of that city.

Dr. E. L. Walsh, director of the Washington County Health Unit, has resigned to accept a position at the Hines Hospital, Maywood, Illinois. He will be succeeded by Dr. Daniel C. Barrett, who has been connected with the Cincinnati, Ohio, Health Department for the past three years.

Dr. Herman C. Kluever of Fort Dodge, spoke before the Humboldt Social Community Club, Friday, January 7, on "Causes and Results of Defective Vision."

MARRIAGES

Miss Inga Hill, daughter of Mr. and Mrs. Charles Hill of Aurora, Minnesota, and Dr. George H. Steele of Belmond, were married January 4, at the home of Mr. and Mrs. Glenn Klemme in Belmond. Immediately after the ceremony the couple left for a wedding trip through the southern states, after which they returned to Belmond, where Dr. Steele has been engaged in the practice of medicine for many years.

The marriage of Miss Alice Jensen of Valley, Nebraska, and Dr. C. R. Rominger of Cresco, Iowa, took place December 30, at the home of the bride's parents. They will make their home in Cresco, where Dr. Rominger has been associated with Dr. George Kessel and Dr. W. A. Bockoven for the past few months.

DEATH NOTICES

Brownson, John Joseph, of Dubuque, aged eighty-one, died January 29, as the result of a heart attack suffered a short time ago. He was graduated in 1886 from the State University of Iowa College of Medicine, and at the time of his death was a member of the Dubuque County Medical Society.

Slattery, Joseph Thomas, of Dunlap, aged fifty-seven, died January 1, after a sudden heart attack. He was graduated in 1909 from Creighton University School of Medicine, and at the time of his death was a member of the Harrison County Medical Society.

Sones, Calvin O., of Panora, aged eighty-four, died suddenly January 12 at Maquoketa while on an automobile trip. He was graduated in 1886 from the State University of Iowa College of Medicine, and at the time of his death was a life member of the Dallas-Guthrie and Iowa State Medical Societies.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENEGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

Early Records of Public Health In Iowa

It is significant that as Iowa approaches her one hundredth anniversary as a territory, the sentiment of prevention, as related to public health has been uppermost in the minds of the medical profession and all governmental agencies in this state since the early period of its history.

The earliest reference to the enactment of any preventive measures concerned with public health appears in the Acts and Resolutions passed at the regular session of the Tenth General Assembly of the State of Iowa in the year 1864, as contained in Chapter 18. "An Act to Amend Chapter 173 of the Revision of 1860, concerning offences against Public Health," which reads as follows:

Section 1. Be it enacted by the General Assembly of the State of Iowa, if any person throw or cause to be thrown, any dead animal into any river, well, spring, cistern, reservoir, stream or pond, he shall be punished by imprisonment in the county jail not less than ten nor more than thirty days, or by fine not less than five nor more than one hundred dollars.

Approved February 15, 1864.

The first State Board of Health was established by the Eighteenth General Assembly as per Chapter 151, effective April 3rd, 1880. "An Act to establish a State Board of Health in the State of Iowa to Provide for Collecting Vital Statistics, and to Assign Certain Duties to Local Boards of Health, and to Punish Neglect of Duties." The Act comprises twenty-six sections and constitutes a very comprehensive statement of public health measures in keeping with the knowledge of the period. In accordance with the Act, Governor John H. Gear appointed nine members, the Attorney General of the State (by virtue of his office), one civil engineer, and seven physicians, as the first State Board of Health. The term of office was seven years. The following tran-

scription of the minutes of the first meeting of the Board will be interesting.

Des Moines, Iowa, May 5, 1880.

Pursuant to Chapter 151, Acts of the Eighteenth General Assembly, the State Board of Health convened at the State House, at 10:00 o'clock a. m., May 5, A.D., 1880.

Present: J. W. McJunkin, Attorney General, Wm. S. Robertson, M.D., Phillip W. Lewellen, M.D., Wil-mot H. Dickinson, M.D., Henry H. Clark, M.D., Justin M. Hull, M.D., Ephraim M. Reynolds, M.D., and George F. Roberts, M.D. A temporary organization of the Board was perfected by the election of Dr. Lewellen, Chairman, and Dr. Roberts, Secretary.

Governor Gear laid before the Board the applications for Secretary of: Dr. J. F. Kennedy, of Des Moines; Dr. H. R. Farquaharson, of Davenport; Dr. F. S. Thomas, of Walnut; and G. S. Needham, of Grinnell. Applications were also presented by members of the Board from: Mrs. M. A. McGonegal, of Carlisle; W. A. Cottrell, of Waterloo; W. W. Sweetzer, of Storm Lake; Mr. Burdick, of Page County; Dr. Hale, of Centerville; Dr. Baker, of Indianola; and L. F. Andrews, of Des Moines.

The recommendations were read by the Secretary, and the election of a permanent secretary was made the first business of the afternoon session. On motion of Dr. Dickinson, Dr. Robertson was elected president. On motion, Dr. Dickinson was elected president pro tem. On motion of the Attorney General, Dr. Robertson and Dr. Lewellen were elected a special committee to prepare and report by-laws and rules tomorrow morning.

The Board proceeded to cast lots for the terms of office, in accordance with Section 1, of the above mentioned Act, which resulted as follows: Dr. Robertson, one year, 1881; Dr. Dickinson, two years, 1882; Dr. Roberts, three years, 1883; Dr. Hull, four years, 1884; Dr. Lewellen, five years, 1885; Dr. Clark, six years, 1886; and Dr. Reynolds, seven years, 1887. The terms to date from the 23rd of April, A. D., 1880.

On motion, the Board adjourned to 2:00 o'clock p. m.

Afternoon Session

Board met pursuant to adjournment (at 2:00 o'clock).

J. L. Loring, civil engineer, presented his commission as a member of the board. On taking the chair, as permanent president, Dr. Robertson addressed the board, setting forth the object of the law creating the board, and the importance of a more thorough and perfect sanitary system throughout the state. The address was ordered printed in

the proceedings. The board proceeded to the election of a secretary of the board, in accordance with Section 10 of Chapter 151, whereupon L. F. Andrews was declared as permanent secretary.

Forms for blanks were presented and considered: Form No. 14, Register of Physicians and Midwives, revised and adopted (for use of county clerks).

Form No. 18, Register of Marriages, adopted.

Form No. 12, Register of Births, adopted.

Form No. 13, Register of Deaths, adopted.

Form No. 12, Register of Stillbirths, adopted.

Form No. 1, Physician's Return of Births, adopted.

Form No. 2, For Return of Marriages, adopted.

Form No. 3, Physician's Return of Stillbirths, adopted.

Form No. 4, Physician's Return of Deaths, adopted.

Form No. 5, Coroner's Return of Deaths, adopted.

Form No. 19, Record of Health Officers, adopted.

On motion, the secretary was ordered to have printed the forms adopted and furnish county clerks with copies thereof, in accordance with Section 4, Chapter 151, Laws of Eighteenth General Assembly. Form for Return of Contagious Diseases presented, and on motion of Dr. Lewellen, was referred to a special committee, of Lewellen, Dickinson and Clark, to report tomorrow morning. Form for expense account of the board presented, and adopted, and a book of six quires ordered printed. Form for record of documents, adopted, and a book of eight quires ordered printed. Form for record of officers of boards of health, adopted, and adapted to counties, cities and towns. On motion, the secretary was instructed to notify county clerks and auditors of their duties under the provisions of Chapter 151. The secretary, on motion, was instructed to notify township clerks that boards of health must be organized at once, and report officers thereof.

On motion, the board adjourned to 9:00 o'clock tomorrow morning.

Thursday, May 6, 1880

The board met, pursuant to adjournment, all members present, President Robertson in the chair.

The special committee, to whom was referred the form of blank for Returns of Deaths by Contagious Diseases, reported a form; also a circular on diphtheria, and a circular on "Sanitary Regulations against Smallpox." Their report was accepted and the committee discharged. The form for Return of Contagious Diseases was adopted. The circulars on diphtheria and smallpox were adopted, and the secretary instructed to have them printed and distributed in such localities as those diseases may prevail.

The Committee on By-Laws and Rules presented their report, which, after some amendments, was adopted, to wit:

BY-LAWS AND RULES

Annual Meeting

1. The annual meeting of this board shall be in May of each year.

Election of President and Secretary

2. The president and secretary shall be elected by ballot at the annual meeting, and shall hold their offices for one year, unless sooner removed by a vote of a majority of the members present, for sufficient cause, at any regular meeting, or at a meeting specially convened for that purpose.

Vacancy

In case of a vacancy occurring as above, it shall be competent for a majority of the members present to elect another president or secretary, at such stated or regular meeting, to fill such vacancy until the next annual meeting.

Duties of President

3. The duties of the president shall be such as ordinarily pertain to the presiding officer of deliberative bodies, together with such other duties as are prescribed by the Act of the General Assembly creating this board. He shall also supervise and indorse all circulars and forms used by the board or its secretary.

Duties of the Secretary

4. It shall be the duty of the secretary to notify members of the time of holding all special and regular meetings of the board; keep a correct record of all such meetings; supervise the preparation and issuing of all forms and circulars ordered by the board; submit them to the president for his supervision and endorsement, and perform all other duties usually performed by such officer of state boards of health, as may be directed by a vote of this board.

Secretary's Report

5. The secretary shall have his annual report ready for inspection of the board, at its November meetings of each year, and shall have a complete draft of the biennial report, together with copies of all circulars and forms issued or used by himself or the board, ready at the November meeting preceding the session of the General Assembly.

Salary of Secretary

6. The secretary shall receive a salary at the rate of One Thousand Dollars per annum, payable as specified in Chapter 151, Laws of the Eighteenth General Assembly.

Special Meetings

7. The president shall call a special meeting of the board, on the application of three members of the board, at such time and place as may be specified.

Standing Committees

On motion, the following standing committees were appointed by the board:

Food, Drinks, and Water Supply, Dr. Dickinson.

Rest, Dr. Reynolds.

Ventilation, Dr. Hull.

Education, Relation of Books to Health; kind and methods of instruction in use, and methods to be proposed, Dr. Roberts.

Sewage, Drainage and Disposal of Excreta, J. L. Loring.

Influence of Slaughter Houses, Rendering Houses, etc., on Public Health, Dr. Lewellen.

Endemics, Epidemics and Contagious Diseases, Dr. Clark.

Legislation relating to the State Board of Health, Dr. Robertson.

On motion, an invitation was given to the following named persons to prepare papers on the subjects named, for use of the board, and for publication in the annual report of the board:

Adulteration of Food, Dr. Farquaharson, of Davenport.

Death rate as influenced by age, climate and social conditions, Dr. E. A. Guilbert, of Dubuque.

Poisons, Explosives, Chemicals, Accidents and special sources of injury to life and health, including illuminating oils, Prof. G. A. Hinrichs, State University, Iowa City.

Geology and Topography; influence on health of forest trees and their removal, shade trees near dwellings, etc., President A. S. Welch, State Agricultural College.

Climate, general and by season of the year, as relates to age of inhabitants, Prof. J. J. M. Angier, of Fort Madison, Iowa.

Relation of Emigration to the Spread of Diseases, Dr. H. Osborne, of Council Bluffs, Iowa.

On motion, the secretary was instructed to inform the foregoing gentlemen of the action of the board. On motion, Drs. Lewellen, Dickinson and Hull were elected as committee on library. By vote of the board, the secretary was instructed to send Board of Health stationery to each member of the board.

The president presented the account for mileage and attendance of the board as follows:

P. W. Lewellen.....	\$ 27.50
W. H. Dickinson.....	5.00
G. F. Roberts.....	24.00
J. L. Loring.....	5.00
J. F. McJunkin.....	19.00
E. M. Reynolds.....	22.50
J. M. Hull.....	34.00
H. H. Clark.....	38.00
W. S. Robertson.....	17.00
	<hr/>
	\$192.00

On motion, the secretary was instructed to have the account audited as per schedule presented by the president, and the same was audited by the auditor of state, and paid by the state treasurer.

On motion, the secretary and Dr. Dickinson were instructed to procure rooms for the board.

The proceedings as recorded by the secretary, were read and approved.

At 12:00 o'clock M., the Board of Health adjourned, subject to the call of the president.

L. F. Andrews, Secretary.

COMMENT

Considering the period in Iowa medical history it is interesting to note the intelligent comprehension of preventive medicine and public health by these pioneer workers in this field.

Walter L. Bierring

COMING MEETINGS

Because we feel that some of the physicians in Iowa may be interested in a number of national meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

The Missouri-Kansas Neuropsychiatric Association, February 15, Neurological Hospital, Kansas City, Missouri. Dr. Walter Freeman of Washington, D. C., professor of neurology, George Washington University, will speak.

Annual Medico-Military Symposium, sponsored by the Kansas City Southwest Clinical Society in conjunction with the Seventh Corps Area, military surgeons, March 28 and 29, at the Kansas City General Hospital, Kansas City, Missouri.

Third Annual Postgraduate Institute, conducted by the Philadelphia County Medical Society, from March 28 to April 1, Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. Subject, "Diseases of the Digestive Tract."

American Board of Obstetrics and Gynecology will conduct next examination on Monday and Tuesday, June 13 and 14, immediately prior to meeting of American Medical Association. All applications must be filed in the office of the secretary of the organization before April 1, 1938.

American Board of Ophthalmology announces the following examinations during 1938: San Francisco, June 13, Washington, D. C., October 8, and Oklahoma City, November 15. Applications must be filed with the secretary of the organization sixty days prior to the date of examination.

American College of Physicians, Twenty-second Annual Session, April 4 to 8, 1938, New York City.

Association on Mental Deficiency, April 20 to 23, 1938, Richmond, Virginia. E. Arthur Whitney, Elwyn, Pennsylvania, Secretary.

Society for Clinical Investigation, May 2, 1938, Atlantic City, New Jersey. J. M. Harman, Jr., Cleveland, Ohio, Secretary.

Iowa State Medical Society, Eighty-seventh Annual Session, May 11, 12 and 13, 1938, Des Moines, Iowa.

American Medical Association, Annual Session, June 13 to 17, 1938, San Francisco, California.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees

The Board of Trustees of the Iowa State Medical Society met in the central office Friday, January 28, 1938, at one-thirty p. m., with all members present.

The payment of current bills was approved, and the audit as prepared by Widdup and Company was accepted. The budget for 1938 was then set up. It was voted to publish a brief financial statement of the Society in the Handbook, rather than the detailed audit, and to keep the audit in the offices of the three trustees for reference by members who wished to see it. The question of newspaper publicity for the State Society was discussed, but it was felt that it was too expensive to undertake at the present time. The Board authorized the expenses of Dr. E. E. Shaw to attend the meeting of the Northwest Medical Conference to be held in Chicago Sunday, February 18. Dr. Shaw is representing the Iowa State Medical Society on the program. Expenses were also authorized for the executive secretary and the president to attend the conference. The Board approved the plan suggested by the assistant to the editor of visiting nearby county medical society meetings and presenting advertising problems of the Journal.

The meeting adjourned at three-thirty p. m.

Meeting of the Program Committee

The Program Committee met at the Hotel Fort Des Moines Sunday, January 23, at twelve-thirty. Those present were E. M. Myers, Robert L. Parker, and K. L. Johnston.

The program for the general sessions was accepted as planned. Dr. Evarts Graham of St. Louis will be guest speaker for the surgical section; Dr. C. C. Sturgis of Ann Arbor, guest speaker for the medical section, and Dr. O. Jason Dixon of Kansas City, guest speaker for the eye, ear, nose and throat section. Plans were made for the annual banquet.

The meeting adjourned at four p. m.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- THE CEREBROSPINAL FLUID**—By Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$5.00.
- ESSENTIALS OF PRESCRIPTION WRITING**—By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$1.50.
- EYESTRAIN AND CONVERGENCE**—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s. 6d. net.
- MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$8.50.
- THE PHYSICIAN'S BUSINESS**—By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$5.00.
- PRACTICAL PROCTOLOGY**—By Louis A. Buie, M.D., professor of proctology, The Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.
- SURGICAL DISEASES OF THE MOUTH AND JAW**—By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.
- OPERATIVE GYNECOLOGY**—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine, and Robert James Crossen, M.D., assistant professor. Fifth edition. Revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.
- SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK**—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1937.
- THEORETICAL PRINCIPLES OF ROENTGEN THERAPY**—Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.
- THE 1937 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT**—Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. The Year Book Publishers, Chicago, 1937. Price, \$2.50.
- THE 1937 YEAR BOOK OF GENERAL MEDICINE**—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1937. Price, \$3.00.
- THE 1937 YEAR BOOK OF GENERAL SURGERY**—Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1937. Price, \$3.00.
- THE 1937 YEAR BOOK OF PEDIATRICS**—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

BOOK REVIEWS

1937 YEAR BOOK OF RADIOLOGY

Edited by Charles W. Waters, M.D., associate in roentgenology, Johns Hopkins University, and Ira I. Kaplan, M.D., clinical professor of surgery, New York University Medical College. The Year Book Publishers, Chicago, 1937. Price \$4.50.

The scientific field of x-ray diagnosis and therapy is daily being extended into new phases of medicine. This, the sixth book in the series, presents excellent summaries of the more important articles from the international literature, including, for the first time, articles from Russia and Argentina. The wording is non-technical, and the numerous clear x-ray pictures with arrows for markers, and concise explanations, make the book speak for itself. The roentgenologist cannot keep well informed without it; the general practitioner is given a ready reference to the entire field of x-ray diagnosis and treatment; and the specialist is furnished with a guide to present practices as regards the use of the x-ray in his field.

The outstanding developments in diagnosis are x-rays of the heart synchronized with the electrocardiogram; films of organs in motion, showing, for example, the pulsations of the heart and aorta; x-ray pictures of any desired plane of the body; motion picture studies of the fluoroscopic images; and x-ray pictures of blood vessels, breasts, liver, and spleen by means of thorium dioxide injection. On the therapeutic side, good results from x-ray treatment of numerous infectious diseases, and the use of super-voltage (200,000 up to 1,000,000 volts) x-ray therapy

for internal cancer, are the year's big contributions.

The book is splendidly edited, with frequent, short remarks by the editors, critically evaluating the newer roentgen procedures. A. M. G.

DIABETES: A MODERN MANUAL

By Anthony M. Sindoni, Jr., M.D., chief of the diseases of metabolism at the St. Agnes Hospital, Philadelphia. McGraw-Hill Book Company, New York and London, 1937. Price, \$2.00.

Dr. Sindoni has written a manual which, in an easily understandable way educates the diabetic individual. One section is devoted to questions usually asked the physician by the person who has diabetes; the next section contains facts which the patient should know about his disease; and the last part gives directions on how he should live. Each section is replete with useful, everyday information, and this reviewer feels that the book is one which could be read profitably by every diabetic patient.

It is a matter of record that the intelligent person with diabetes can enjoy a normal life span, and avoid to a large extent the many complications that so commonly occur with this condition. Knowledge of diabetes does not make the patient neurotic or unduly introspective. In fact, it has the opposite effect. Adequate knowledge allows the patient to have a sense of security, and for this reason, the volume is recommended without reservations for the intelligent diabetic individual. E. B. W.

CLINICAL ALLERGY

By Louis Tuft, M.D., Chief of Clinic of Allergy and Applied Immunology, Temple University Hospital. Illustrated. W. B. Saunders Company, Philadelphia and London, 1937. Price \$8.00.

This book presents the subject of allergy in a clear and concise manner. It is an excellent text for medical students, general practitioners and specialists interested in various branches of medicine, for there are chapters of considerable interest on allergy in relation to other specialties. The author discusses thoroughly and extensively:

I. Fundamental principles of allergy and anaphylaxis.

II. Methods of diagnosis and treatment of allergic diseases.

III. Etiology, pathology, symptomatology, diagnosis and treatment of asthma, hay fever, migraine, allergic dermatoses, allergy in children, gastro-intestinal allergy and other allergic conditions.

At the conclusion of each chapter is a summary. The appendix of the book consists of practical laboratory methods, allergic diets and a list of allergens and their sources. Author and subject indices add to the value of the volume for reference work.

M. H. N.

THE EYE AND ITS DISEASES

By 82 international authorities. Edited by Conrad Berens, M.D., director of research, New York Eye and Ear Infirmary. 1254 pages with 436 illustrations. W. B. Saunders Company, Philadelphia, and London, 1936. Price, \$12.00.

The treatment of diseases of the eye has been recognized as a specialty for many years and the research in this particular branch of medicine has been advanced during the past few years by many original observations in this country and abroad. This volume reflects the opinions and observations of some eighty-two international authorities in this field and because of its encyclopedic scope assumes the proportions of a reference work which will be welcomed by every practitioner in this field. It is interesting to note that greater attention has been given to the relation of systemic conditions to diseases of the eye and greater insight furnished of the diagnostic rôle of eye examinations in the general practice of medicine.

In the chapter dealing with eye injuries, special attention is given to the attitude of compensation boards which should be of very practical value to the industrial surgeon. The anatomy of the eye is treated in nine chapters followed by four chapters discussing the physiology of this organ. The examination of the eye is exhaustively presented in nine chapters with five additional chapters devoted to refraction and accommodation. The remaining forty-five chapters discuss the various diseases common

to this organ and therapeutics of these diseases with chapters on preventive ophthalmology, laboratory diagnosis and the legal aspects of this specialty. Reference to readily accessible literature is furnished at the close of each section. The volume is well illustrated.

R. R. S.

SYNOPSIS OF PEDIATRICS

By John Zahorsky, M.D., professor of pediatrics, St. Louis University School of Medicine. Second edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$4.00.

This volume is a condensation of modern pediatric knowledge. It is designed especially for the medical student, and presents a concise cross-section of the subject of pediatrics. The book is divided into sixty chapters, each chapter representing the synopsis of a one hour lecture on some broad phase of pediatrics. Because of its brevity it will prove of little value to the general practitioner or the pediatrician.

D. H. K.

TWEEDY'S PRACTICAL OBSTETRICS

Revised and largely rewritten by Bethel Solomons, M.D., gynecologist, Dr. Steevens' Hospital, Dublin. Seventh edition. Oxford University Press, London and New York, 1937. Price, \$8.75.

This is a valuable book because of its clear, concise and practical presentation of the fundamentals of obstetrics. Diagnosis and treatment are given equal consideration. The chapters on abnormal labor, puerperal fever and abortion are very well written. There are adequate illustrations throughout the text. A considerable section is devoted to the care of the infant and this, too, is characterized by a clarity and conciseness. The book is very interesting to read because of its definite British phraseology. The reviewer feels that this is an excellent book for the library of anyone engaged in obstetric practice. Its value is also reflected by the fact that it has passed through seven editions since the original writing in 1908.

R. W. S.

CLINICAL REVIEWS OF THE PITTSBURGH DIAGNOSTIC CLINIC

Edited by H. M. Margolis, M.D., Pittsburgh. Paul B. Hoeber, Inc., New York, 1937. Price, \$5.50.

This volume consists of reviews by Dr. Margolis of the more common conditions found in medical practice. The discussions are simple; only the fundamental facts are included and anything of a controversial nature has been omitted. The treatment which he suggests is, likewise, such as has been well established. The book makes interesting, concise, authentic and up to date reading on the common conditions which we all see in our daily practice.

E. E. K.

RESEARCH IN DEMENTIA PRAECOX

By Nolan D. C. Lewis, M.D., professor of neurology, Columbia University. The National Committee for Mental Hygiene, 50 West 50th Street, New York, N. Y., 1937. Price, \$1.50.

This monograph by Dr. Lewis is a survey of the known facts and theories regarding dementia praecox essential to extensive research into the causes of this disease now being financed by the Supreme Council 33° Scottish Rite Masons of the Northern Jurisdiction.

The introduction discusses difficulties encountered in psychiatric research in general, and dementia praecox research in particular, and points out the lack of previous adequate and controlled studies. Subsequent chapters are devoted to an exhaustive consideration of facts and theories as applied to types, symptoms, etiology, differential diagnosis and therapy. The broader philosophic aspects of the problem are discussed. Specific points in need of further study, and methods of procedure for these researches are suggested. There is also an extensive bibliography covering the fifteen years prior to 1936.

While primarily for purposes of orientation in a somewhat limited field, the monograph is so concise and complete that it becomes a valuable text for the physician who desires a comprehensive view of this most common psychosis.

R. C. D.

METHODS OF TREATMENT

By Logan Clendening, M.D., clinical professor of medicine, Medical Department of the University of Kansas. Sixth edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$10.00.

This, the sixth edition, conforms to the U. S. Pharmacopoeia. The author attempts to describe treatment both as to technic and rationale. On the basis of bringing together all procedures employed in treatment he justifies this volume exceedingly well. It is divided into two main parts. The first section describes the various procedures which are used under the headings of rest; drugs; bacterial therapy and prophylaxis; extracts of the ductless glands; dietetic; heat and cold, hydrotherapy; medical gymnastics and massage; exercise, electrotherapy; radiotherapy; climate, aerotherapy, heliotherapy, mineral springs, health resorts; psychotherapy and miscellaneous procedures. The second part of the book discusses the application of each procedure and the result the physicians may expect. These are grouped under diseases due to infection, allergy, metabolism, blood, cardiovascular system, respiratory system, kidney, digestive system, ductless glands, intoxications, organs of locomotion and some of the common nervous disorders.

Dr. Clendening has changed some of his previous views, such as that on the value of pneumothorax therapy. New discussions have been added on such drugs as protamine zinc insulin and seven others. He has not included methods and procedures of treatment not sufficiently established at the present time. At the end of each chapter in the first part there is a bibliography classified according to the various drugs, and in the second part, according to the diseases. The discussion and treatment of psychoneurosis is an exceptionally unique chapter.

This volume is truly outstanding in its simplicity, clarifying illustrations, beautiful print and arrangement. It deserves a place in every physician's library.

E. E. K.

A TEXTBOOK OF MEDICINE

By American authors. Edited by Russell L. Cecil, M.D., professor of clinical medicine, Cornell University Medical College. Fourth edition, revised and entirely reset. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$9.00.

This is the fourth edition of an excellent, authoritative and up to date textbook of internal medicine edited by Russell L. Cecil. It consists of concise descriptions by 130 contributors, specialists in specific fields of internal medicine.

This volume is a valuable addition to the library of every physician, providing a reference book that is practical and authoritative. The latest contributions to treatment are presented and evaluated. A new chapter on the disease of the peripheral vessels is included in the new edition.

D. H. K.

GENERAL HYGIENE AND PREVENTIVE MEDICINE

By John Weinzirl, M.S., Ph.D., Dr. P. H., late professor of bacteriology and director of the Alice McDermott Foundation of the University of Washington. Lea and Febiger, Philadelphia, 1937. Price, \$4.00.

This book discusses primarily the methods of controlling disease. Such methods as immunization in its various forms; specific methods; control of carriers of infection; control of sanitary, physical, personal and social environment; group control and control of old age are discussed. There are, also, short notes on the history of these diseases and the treatment. The book can be recommended to those for whom it was intended; namely, college students, medical students, nurses and public health and social workers.

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VOL. XXVIII

MARCH, 1938

Number 3

OPERATIONS OF CHOICE AND NECESSITY IN THE SURGICAL TREATMENT OF DUODENAL ULCER*

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The surgical procedures for duodenal ulcer are comprised of four general types, the first three of which may be spoken of as conservative operations insofar as magnitude of the operation and the risk involved are concerned, while the fourth type is a radical operation in these respects. These types are, first, simple closure of a perforation; second, the indirect operations of gastro-enterostomy and gastroduodenostomy with or without excision of the ulcer; third, plastic operations on the pylorus with or without excision of the ulcer, devised primarily to eliminate the pyloric sphincter and to widen the pyloric outlet; and fourth, partial gastric resection of one type or another. No one of these operations in its fundamental principle is new, for all were developed prior to twenty-five years ago and have been modified only in the details of their technical execution.

The indirect operation of gastro-enterostomy for pyloric occlusion, as an anterior anastomosis, was first performed by Wolfler in 1881, and as a posterior operation in 1883 by Courvoisier. Moynihan credited Jaboulay as the first to suggest and perform gastroduodenostomy in 1892. During the following ten years Kocher, Terrier, Villard and others devised various modifications of Jaboulay's operation. The direct and plastic operations upon the duodenum and pylorus as they have been used in the surgical treatment of duodenal ulcer, practically all of which in their magnitude include excision of the ulcer and division of the pyloric sphincter, had been firmly established by Heinecke, Mikulicz, Finney and others prior to 1910, and quite definite indications for their employment had been formulated. Perhaps the most noteworthy modification of these direct operations during recent years was that of the late Dr. E. Starr Judd, the description of which

in its technical execution was first published in 1927. His operation was evolved from the earlier direct and plastic operations upon the duodenum and pylorus. A frequent observation has been that plastic procedures in which the pyloric sphincter is divided transversely and the incision closed in the opposite direction do not seem to abolish permanently sphincter action of the pyloric ring. To abolish permanently such post-operative sphincter action, Judd excised the anterior half or two-thirds of the pyloric sphincter with the duodenal cap and ulcer, and restored gastroduodenal continuity by transverse suture approximation of the stomach and duodenum.

The fundamental principles of partial gastrectomy remain today as they were established by Billroth even though the operation was first successfully performed for carcinoma in 1881 by this pioneer in modern gastroduodenal surgery. The modifications of Billroth's original procedures as they have been made by Kocher, Polya, Balfour and others have to do largely with methods of restoring gastro-intestinal continuity following gastric resection. These have facilitated high gastric resection, subtotal and even total gastrectomy. It is readily apparent that a variety of surgical procedures in their original and modified forms are available to the surgeon who has to deal with the surgical duodenal ulcer. The variety of available surgical procedures immediately suggests that all are not always applicable nor are they always productive of entirely satisfactory results. So many factors are concerned in the applicability of these surgical procedures, that any one of them under certain circumstances may be either the operation of choice among the many which may be used, or by virtue of inapplicability of others, it may be an operation of necessity. The fact that all operations for duodenal ulcer are not always followed by satisfactory results is due in most instances first, to failure to adhere strictly to the indications for surgical intervention; second, to faulty selection of the surgical procedure best suited under all the cir-

*Read at the Annual Alumni Clinic, College of Medicine, State University of Iowa, Iowa City, November 12 and 13, 1937.

cumstances as they may exist; and third, technical errors in the execution of the operation.

SURGICAL INDICATIONS

An operation for duodenal ulcer must of necessity be a purposeful one and instituted to achieve a certain result. The indication for operation determines the purpose of surgical intervention, and a defined purpose facilitates the proper selection of the particular procedure through which the desired result may be achieved. There are three positive indications for surgical intervention in duodenal ulcer; first, acute perforation of the ulcer; second, cicatricial pyloric stenosis with gastric retention; and third, recurrent massive hemorrhage. There exists today considerable agreement among internists and surgeons that the chronic posterior penetrating ulcer of the duodenum is usually not amenable to medical management, and if not in most instances, surgical intervention becomes not only advisable but necessary in many. Patients with such a lesion usually have had one or more acute episodes coincident with the posterior penetration of the duodenal wall amounting to a perforation, protective in nature, on to the pancreas in most instances. While a penetrating ulcer of the posterior duodenal wall may hardly be considered a condition in which surgery is absolutely necessary, experience has proved that once the diagnosis of such a lesion has been made, the interests of the patient are usually best served by an early operation.

Acute perforation of a duodenal ulcer, with generalized dissemination of gastroduodenal contents, is immediately followed by such definite clinical manifestations that the diagnosis of perforation of an ulcer or of an acute intra-abdominal lesion should lead to surgical intervention at the earliest moment. Gastric retention due to cicatricial contraction, and pyloric stenosis as the result of a recurring duodenal ulcer of long duration, likewise requires surgical intervention. It is true that temporary and intermittent gastric retention due to edema in and about the ulcer during an acute exacerbation or reactivation of a duodenal ulcer not infrequently is successfully controlled by non-surgical measures. In many of these, however, each succeeding episode leads to the dense scar tissue characteristic of the truly chronic stenosing type of ulcer at or near the pylorus resulting in prolonged gastric retention which usually can be obviated only through surgical intervention.

The bleeding duodenal ulcer presents a serious problem to both the internist and the surgeon and usually the question arises as to whether medical management shall be relied upon or whether an

operation shall be performed. Two types of hemorrhage are encountered: the periodic slow-bleeding or weeping type of hemorrhage, characterized clinically by occult blood in the stool periodically and an intermittent or progressive secondary anemia in which no grave emergency situation arises; and the massive hemorrhage in which large quantities of blood are lost rapidly. In the massive hemorrhage an emergency major problem in therapy is presented. It is a commonly held and frequently expressed opinion that massive hemorrhage from a duodenal ulcer is rarely fatal and is best treated by non-surgical measures. Hemorrhage of one type or another is not an infrequent complication in ulcer for it has been reported to occur in from 20 to 35 per cent of the cases. The mortality rate in the cases of massive hemorrhage has been reported to be from five to fifteen per cent. The danger of a fatality increases rapidly with advancing age and it is materially higher after the fifth decade than it is in younger persons. Hemorrhage of one type or another is of sufficient severity to demand due consideration of surgical measures in many cases.

No great problem is involved in the consideration of surgical treatment of the bleeding duodenal ulcer in which careful medical treatment has failed to control the intermittent slow-bleeding resulting in a prolonged secondary anemia, for if operation becomes necessary it may be instituted as an operation of election at a most propitious time. The acute massive hemorrhage of shock-producing proportions, particularly when it occurs in persons beyond the fifth decade of life, is another matter and when conditions proceed from bad to worse and bleeding continues under non-surgical treatment, including the transfusion of blood, an early surgical attack directly upon the bleeding lesion, even if the hazards are great, may provide the only lifesaving method. At times the surgeon is confronted by just such a problem and its responsibilities. He recognizes the extreme hazards and attendant difficulties of an operation upon an exsanguinated patient, and should consider an operation only after all other methods have failed to control the bleeding. Recovery after a massive hemorrhage from a duodenal ulcer offers no assurance whatsoever that subsequent bleeding will not occur. My own experience has definitely crystallized the opinion that one massive hemorrhage in persons beyond the fifth decade of life and two massive hemorrhages in younger persons establish just and sufficient cause for an operation as soon as the patient's general condition will permit.

There are certain cases of uncomplicated duodenal ulcer in which indications for surgical treat-

ment become well defined, not as absolute but as relative indications. It is well known that medical management of the uncomplicated duodenal ulcer often is entirely successful in the symptomatic control of the lesion and frequently results in complete healing without subsequent recurrence. In certain individuals, however, medical treatment fails to control the symptoms or to prevent recurrences, the cause of which may be inadequate treatment or difficulties encountered beyond the control of the physician in carrying out adequate treatment. In the absence of specific contraindications, an operation should receive due consideration in such cases. The same may be said of those cases in which the economic status or occupation of the individual is such that he is unable to avail himself of continued or repeated medical management which embraces more of a rigid regimen that can be carried out in the ambulatory state or while he is about his business of providing a livelihood.

SELECTION OF OPERATION

In accordance with the foregoing indications for operation in duodenal ulcer the purposes of surgical procedures become clearly defined. Broadly speaking, these purposes embrace the saving of life and the curing of the ulcer. Specifically they are: first, closure of a perforation; second, control of bleeding in the hemorrhagic ulcer; third, relief from pyloric stenosis and gastric retention; fourth, reduction of gastric acidity or gastric secretion or both; and fifth, the elimination of factors predisposing to reactivation or a new ulcer. After my personal experience in the surgical treatment of approximately 842 cases of duodenal ulcer during the past eighteen years, I realize that these purposes are more readily enumerated than accomplished. I also know that during recent years we have more nearly achieved the desired results in the surgical treatment of duodenal ulcer than formerly, due largely to a careful selection of the surgical procedure and its execution in accordance with indications for and the purposes of an operation instead of the more or less routine employment of a single operation.

Acute perforation of a duodenal ulcer with generalized dissemination of gastroduodenal contents throughout the peritoneal cavity presents an emergency situation in which the time interval between perforation and surgical closure determines the probability of the patient's recovery. The mortality rate of acute perforation of an ulcer rises rapidly with each succeeding hour that this time interval exceeds six hours. It is worthy

not usually permit an operation of elective magnitude of emphasis that the surgeon's responsibility embraces only the treatment of the emergency complication by closure of the perforation by the most expeditious method, and not by converting a relatively simple operation into one of considerable magnitude to cure the ulcer. Cure of the ulcer is not the purpose of an operation for an acute perforation. The seriousness and mortality rate of the complication of acute perforation do tude which might under other circumstances be employed as one curative in purpose with relative safety. Roscoe R. Graham most aptly made the point when he said "the fundamental surgical principle applicable to all emergency surgery—that the patient be treated solely for the lesion creating the emergency—should be observed to a greater degree in the treatment of patients suffering from acute perforation of a duodenal ulcer than in almost any other acute intraperitoneal lesion. We have no responsibility to such patients but to save their lives." In following such a policy the purposes of the operation in the emergency are best served and the patient is given the most favorable opportunity to recover from the complication. A variety of methods of closing a perforation of a duodenal ulcer have been utilized. The simplest methods have often been the most successful. Experience has proved that the introduction of a few sutures tied over a piece of omentum, either free or attached, usually suffices, and contrary to an opinion often expressed, these sutures may be placed effectively in the indurated inflammatory tissue surrounding the perforation. It is common knowledge that simple closure of a perforated duodenal ulcer provides the patient with no assurance against recurrence and reactivation of the ulcer. In fact, recurrence of symptoms is manifested in most patients who have recovered from simple closure of a perforation, and in many of these, subsequent operations are necessary but usually they may be then employed as operations curative in purpose at an elective time. Even though subsequent operations curative in purpose are often necessary, the fundamental principle of simple closure of the perforation cannot usually be departed from.

A bleeding duodenal ulcer may heal and future bleeding may be permanently obviated following an indirect operation, either gastro-enterostomy or gastroduodenostomy. By virtue of the inflammatory reaction in or about a duodenal ulcer or the pylorus, one or the other of these operations only may be applicable without subjecting the patient to undue risk. In general, however, one should remain mindful of the objectives of an

operation for duodenal ulcer when bleeding has been a major complication, and that objective is excision of the lesion. I have never been quite able to subscribe to the theory or practice of placing deep sutures in or about the duodenum with the hope that thereby bleeding would be permanently controlled. It is in the bleeding ulcer that the purpose of an operation is two-fold; control of bleeding and the elimination of factors predisposing to reactivation of the ulcer. No one has any assurance whatsoever in the achievement of either objective unless the ulcer is excised. Even though recurrent hemorrhage of one type or another is a very definite indication for operation, there is great doubt in my mind regarding the advisability of an operation for a hemorrhagic ulcer unless the surgeon is qualified and is prepared to execute a surgical procedure which includes excision of the lesion from which the bleeding has occurred. This may be a relatively simple operation when the ulcer is on the anterior duodenal wall, or it may be of considerable magnitude when the ulcer is a penetrating lesion on the posterior wall of the duodenum. The anterior wall ulcer often is readily excised in the course of pyloroplasty of one type or another. One should remain mindful of the fact that not infrequently duodenal ulcers are multiple, and often it is the ulcer on the posterior wall from which the bleeding has occurred and not from the ulcer on the anterior wall. Transduodenal excision of a penetrating ulcer of the posterior wall of the duodenum has its advocates, but in my own experience the procedure has occupied the position of one of necessity through inapplicability of other methods and not as a method of choice. My own experience has led me to adopt partial gastric resection as the elective operation of choice in dealing with a bleeding ulcer on the posterior wall of the duodenum. Division of the stomach proximal to the pylorus at a level dependent upon the amount of stomach it is desired to remove allows an approach between the head of the pancreas and duodenum to the ulcer on the posterior duodenal wall, and facilitates its wide excision with subsequent restoration of gastro-intestinal continuity by either the Billroth I or II method or the method of Polya.

Gastric retention as the result of a chronic stenosing duodenal ulcer is the most readily amenable to surgical relief of all complications of duodenal ulcer. Circumvention of pyloric stenosis by either a gastro-enterostomy or gastroduodenostomy facilitates the restoration of the normal emptying time of the stomach. In these cases of long standing cicatrizing duodenal ulcer

with gastric retention, the operation of gastro-enterostomy when accurately executed is followed by its most brilliant results. Dysfunction of a gastro-enterostomy is frequently due to faulty selection of the gastro-enterostomy site in either the posterior wall of the stomach or in the jejunum or both, resulting in angulation of the proximal or distal loop of the jejunum. It is essential that the jejunum and stomach fit one on to the other without undue tension or angulation.

Gastroduodenostomy, totally disregarding the pylorus, as a lateral anastomosis between the pyloric portion of the stomach at the greater curvature and the second or third portion of the duodenum, possesses many advantages when it can be employed. The operation requires a mobile duodenum or one which can be sufficiently mobilized to make at least the second portion of the duodenum available for the anastomosis. Wider applicability of such a gastroduodenostomy is possible with an increasing experience in the mobilization of the duodenum. A gastroduodenal anastomosis in which the second or third portion of the duodenum can be sufficiently mobilized makes available for an anastomosis that portion of the duodenum in which the degree of alkalinity of the duodenal contents is maximum and in which the duodenal mucosa is most acid-resistant. Gastroduodenostomy successfully circumvents the pylorus and first portion of the duodenum. It seldom, if ever, is followed by an anastomotic or new ulcer, and thereby obviates the principal cause for indictment of gastro-enterostomy. The excellent results which follow the operations of gastro-enterostomy or gastroduodenostomy for benign pyloric obstruction resulting from a stenosing duodenal ulcer establish them as the operations of choice and necessity in dealing with this complication of duodenal ulcer. Partial gastric resection for this complication merits no consideration whatsoever.

In the complicated duodenal ulcer the objective of an operation is clearly defined and, through the selection of the most applicable procedure under the circumstances, that objective usually can be achieved. The uncomplicated duodenal ulcer in which the consideration of surgical treatment may be justifiably entertained is one in which the purposes of operation are at times not entirely satisfactorily accomplished. The objectives here embrace the reduction of gastric acidity or gastric secretion or both, and the elimination of factors predisposing to reactivation or new ulcer, which probably are all one and the same. Without here presenting the evidence, there is much to suggest that gastric acidity and gastric

secretion are all important in the development of peptic ulcer, and are likewise all important in the reactivation and recurrence of ulcer. Any form of treatment, medical or surgical, is directed toward the control of gastric acidity and gastric secretion. Practically all surgical procedures curative in purpose have been designed to control gastric acidity and gastric secretion through either neutralization and dilution or through quantitative reduction. Utilization of the alkaline duodenal and jejunal contents for purposes of neutralizing gastric acidity and diluting gastric secretion is provided in variable degrees in all operations for duodenal ulcer curative in purpose, whether those operations are of the conservative or radical group. An often hoped for and at times attained permanent quantitative reduction of gastric secretion follows partial gastric resection through the removal of a large part of the acid secreting portion of the stomach. That partial gastric resection not infrequently fails to lower permanently the degree of gastric acidity either through neutralization and dilution or through quantitative reduction of gastric secretion is attested by the number and percentage of cases of new gastrojejunal or jejunal ulcer which have followed partial gastrectomy for duodenal ulcer. Whether for purposes of making the point one accepts the minimum or the maximum recorded incidence of such new ulcer formation following partial gastrectomy, depends upon whether one wishes artfully to elevate partial gastrectomy to the exalted position of choice among the operations for duodenal ulcer or whether one will allow the radical procedure to attain its relative position among surgical procedures on its merit. He who enthusiastically endorses the thesis that partial gastrectomy for the benign uncomplicated duodenal ulcer is the operation of choice, if any operation at all is to be considered, is immediately confronted with the difficulties of a plausible defense of an unjustifiable risk and mortality rate. Having had a variable degree of experience with the various surgical procedures in duodenal ulcer, taking into account the surgical risk, mortality rate, and the ultimate results, it is my own personal opinion that partial gastrectomy as a primary operation for duodenal ulcer should be reserved as a procedure of necessity and employed only in those cases in which the purposes and objectives of surgical treatment cannot be accomplished by a conservative operation.

For the uncomplicated duodenal ulcer in which the previously enumerated relative indications for

the consideration of surgical treatment exist, the conservative operations provide an opportunity to accomplish the purposes of such treatment with a reasonable degree of assurance and a minimum risk within a legitimate mortality rate. Experience has proved that of the direct or plastic operations upon the duodenum, those which include rather wide removal of the duodenal cap with the ulcer and excision of at least half of the pyloric sphincter are followed by fewer instances of recurrent ulcer than those in which the first portion of the duodenum is left more or less intact and the pyloric sphincter action is not permanently abolished. There is considerable experimental and clinical evidence to suggest that unless the sphincter action of the pylorus is permanently abolished in these plastic operations and that unless opportunity for reflux of duodenal contents into the stomach is provided the diluent and neutralizing effects of the alkaline duodenal contents occur too late to protect the vulnerable first portion of the duodenum. Dilution and neutralization of the acid gastric secretion immediately previous to its passage into the duodenum apparently provides the maximum protection to the first portion of the duodenum where tissue susceptibility is high as evidenced by the development of the original ulcer. Direct approach to a duodenal ulcer with its excision and the performance of a plastic operation are not always readily accomplished and under these circumstances a posterior gastro-enterostomy or gastroduodenostomy may be employed. When one or the other of these operations is applicable, my experience during recent years has led me to look upon gastroduodenostomy as the procedure of choice, with total disregard of the ulcer and pylorus, because it delivers the diluent and neutralizing alkaline duodenal secretions to the stomach at the proper time and place to provide the maximum protection to the duodenal mucosa. Furthermore, as has been stated previously, an anastomotic or new ulcer practically never occurs. An increasing experience in the mobilization of the second portion of the duodenum has materially facilitated a more frequent execution of the operation of gastroduodenostomy than formerly in the surgical treatment of duodenal ulcer. In terms of its applicability, with the excellent results which follow and the small risk which is involved, this operation merits a much higher position among the operations of choice for duodenal ulcer than it has been accorded heretofore.

SURGICAL PAROTITIS

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Surgical parotitis has become less common since the importance of oral hygiene and fluid balance has been realized. Whereas Paget was able to report 101 cases in 1886³, Maurer¹² in 1937 was able to collect only 33 cases in 35,000 operations at the Surgical Clinic of Munich. Other estimates place its incidence as low as one in six thousand cases.

DISCUSSION

Pathology: The condition is usually unilateral, but not always so, and the organism is usually a staphylococcus. Causes of infection are first, ascending, along the parotic duct; second, hematogenous; and third, traumatic, as by the anesthetist.

Proponents of the hematogenous theory are far fewer at the present time than formerly. The fact that there is almost always inflammation of the duct, with hyperemia and ectropion of its orifice, would suggest that the ascending theory obtains frequently. Often there is no demonstrable focus of infection in the body. Sometimes when there is, the streptococcus is found; yet the inflamed gland practically always yields the staphylococcus. Berndt, Buck and Buxton² were able to produce a parotitis in dogs by injecting either the parotid duct or the superficial temporal artery, but it was much easier when organisms were injected into the duct. Their histologic material shows collections of inflammatory cells in the larger ducts when the infection was ductogenous, and in the smaller ducts when it was hematogenous. Custer⁵ studied a human case histologically, and his sections resembled the ductogenous cases which were produced experimentally. Anesthetic trauma as a causative factor is more apparent than real. Duration and difficulty of anesthesia do not bear any statistical relationship to the incidence of the disease. Leithauser and Cantor¹¹ report eight patients, four of whom had received local anesthesia. Previous infectious parotitis has no bearing.

Dehydration, leading to reduced salivary secretion, is an especially important predisposing factor, since it not only reduces the general resistance as a whole, but makes oral hygiene more difficult to maintain. The postoperative exhibition of atropine would have a similar effect. In two of the cases presented, the front teeth were sparkling clean, but both upper and lower molars and premolars had a definite coating on them, and there was a distinct fetor oris. Oral sepsis, if it exists, would naturally allow more organisms in the mouth, and make infection of the duct a little more likely. The extent of the inflammation

here, as anywhere else, is by no means constant. Occasionally one sees a recent postoperative case with some pain and stiffness at the angle of the jaw, and a little swelling; these findings are so evanescent that it is always questionable if a diagnosis of parotitis is justifiable. Some have definite pain, swelling and tenderness, which yield promptly to symptomatic treatment. Next come those with pus formation. Few are permitted to proceed further, but gangrene, cellulitis of the neck, edema of the glottis, erosion or thrombosis of vessels, and mediastinitis are all recorded sequelae. A salivary fistula may occur, but this is distinctly rare if the main duct has not been injured. In this connection one must remember that the parotid gland is the only one of the salivary glands subject to infection in this manner because it is a serous gland; the other salivary glands are mucous glands, and mucin does not encourage the growth of organisms.

Symptoms and signs: First complaints are pain, tenderness, and stiffness in one side of the jaw. This usually starts before the fifth postoperative day. Swelling follows which is not necessarily confined to the parotid region, but always includes it. The integument becomes red, tense, glossy and edematous. It is very difficult to elicit true fluctuation because of the dense fascial investments of the gland. In one of the cases presented, there was a slight drooping of the mouth on the affected side, but this disappeared as recovery took place. In this same case, there was discharge from the ear without any findings on the membrana tympana. Often, if the orifice of the parotid duct is inspected, mucus or pus can be expressed from the hyperemic mucosa.

Differential Diagnosis: The following points in making a differential diagnosis are important:

1. From infectious parotitis, by the history, blood count, and the fact that surgical parotitis is always unilateral, at least in the beginning.
2. From sialolithiasis, by the intermittent swelling, and feeling of tension at meal-time, by palpation and x-ray of the duct.
3. From parotid tumors; these are usually slow in onset and do not cause pain and tenderness to the same degree.

Treatment: The best treatment is prophylactic; keeping the patient's vitality and fluid intake high; scrupulous attention to the hygiene of the mouth, especially in the region of the molars, and chewing gum as a sialogogue. Once the condition is established, this same treatment should be continued. Ice bags applied to the affected area often give considerable or complete relief from pain if the process is not too virulent. It is not advisable to wait for frank fluctuation before incision. Be-

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cause of the dense parotid fascia, necrosis and gangrene may ensue before true fluctuation can be obtained. The incision which gives the best immediate and end results is a longitudinal one a finger's breadth in front of the external auditory meatus. The incision is carried down to the fascia, and blunt forceps are pushed into the gland until pus is obtained (Hilton's method). In this way, there is no danger to the branches of the facial nerve, or any vessels. If the individual case seems to merit it, there is no objection to two or even three incisions, with through and through drainage. Hot dressings and frequent irrigations with some solution, such as Dakin's, to remove the thick pus, are of value. Recently, x-rays have been used in an attempt to avoid incision. Since it is difficult to transport these patients to the x-ray room, and many institutions do not have portable units of a suitable type, packs containing radium have been used. Rankin and Palmer¹³ report favorable results following the use of radium, and very few of their cases needed incision. However, it is difficult to evaluate the efficiency of either x-ray or radium, because approximately half of the cases will resolve with nothing more than ice bags. Leithauser and Cantor¹¹ advocate the use of Lugol's solution by mouth on the grounds that the iodides will be excreted by the gland. It should be kept in mind that all these recent methods are admittedly of value only if used early, at which time it is not possible to forecast how far the process will go.

Prognosis: Most authors exaggerate the seriousness of this condition. Certainly, parotitis frequently causes a marked systemic reaction, but with energetic treatment, it is questionable if more than a very small percentage of patients ought to die from the parotitis ipso. One needs to remember, however, that this disease often occurs in people who are already seriously debilitated by the condition which permitted the infection.

CASE REPORTS

Case 1. The patient, a white female, twenty-six years of age, single, clerk by occupation, was admitted to the hospital on June 21, 1937, with a complaint of right renal colic. A stone was removed from the right kidney pelvis, and a nephrostomy was performed under gas anesthesia. The patient had previously been given avertin and atropine. The duration of the anesthesia was one hour, and the condition of the patient was good throughout. Fluids were forced by all routes. The day after the operation some fullness of the left cheek was noted. On the next day it was larger and slightly tender. The temperature rose from 100 to 101.2 degrees, without any change in

the basic condition to account for the elevation. An x-ray of the duct was negative. Four days later a thin viscous fluid was seen at the mouth of Stenson's duct, and the next day the fluid contained some flakes. The swelling subsided completely in ten days without any treatment, except the application of ice bags. The pain had not been severe, and the patient was not ill. She did not remember having had mumps in childhood.

Case 2. The patient, a white female, twenty-seven years of age, married, was admitted to the hospital on July 6, 1937, with a history of malaise, vomiting, fever and vaginal bleeding. The patient, an extremely poor physical specimen, and apparently very ill, had attempted to induce an abortion by inserting a piece of slippery elm into the uterus. Dilatation and gentle curettage was attempted on the thirteenth day, with the patient under gas anesthesia for ten minutes. Two days later she complained of pain in the right ear, with swelling and glossiness of the skin. It was hard, indurated and brawny. The temperature rose from 101 to 103.5 degrees. The parotid condition remained stationary, but the patient died six days later with septicemia. Nothing approaching fluctuation was ever obtained. Treatment had consisted of four blood transfusions of 500 cubic centimeters each, the administration of prontosil parenterally, and the application of ice bags. At autopsy the right parotid gland was found to be twice the normal size, stony hard, hyperemic, without pus or necrosis. She had died of pneumonia and pelvic abscesses. The patient gave a history of having had mumps as a child.

Case 3. The patient, a white female, forty-seven years of age, married, was admitted to the hospital on July 24, 1937, with a complaint of menorrhagia of seven months' duration, preceded by amenorrhea of two months' duration. Her condition was further complicated by the presence of hypertension. She had had four children. A total hysterectomy and left salpingo-oophorectomy by the abdominal route was performed under gas anesthesia, after the patient had been given morphine and atropine. The duration of the anesthesia was seventy minutes, although it was difficult to maintain a sufficient depth of anesthesia because of respiratory embarrassment. On the third postoperative day the patient complained of a painful fullness in the right parotid region and the temperature rose from 99.4 to 102.8 degrees, the swelling increasing gradually from day to day until it involved the entire right side of the face, including the para-orbital region, and the eye could not be opened. There was a slight drooping of the right side of the mouth, and five days after the onset, there was pain and discharge

from the external auditory meatus. Eight days later there was obvious fluctuation, and a vertical incision with blunt probing yielded pus. Four hours later there was a moderate amount of stridor, dyspnea, and a feeling that there was a "swelling inside the throat." The cervical tissues on this side showed a slight fullness. The respiratory difficulty subsided in a few hours. The pus showed pure *Staphylococcus aureus* on culture. The discharge ceased twenty-seven days later, the subsequent treatment being hot boric dressings and chewing gum. The patient had had mumps as a child.

Case 4. The patient, a white male, thirty-seven years of age, a laborer, was admitted to the hospital on August 21, 1937, with the complaint of abdominal pain. A ruptured appendix was removed and a jejunostomy was performed under gas anesthesia. It was recorded as "difficult" because of rapid respirations, and lasted fifty minutes. Two days later, in spite of forced parental fluids, the tongue was dry and the postoral cavity was dirty. On the sixth postoperative day the temperature rose to 103.8 degrees, and the next day there was pain in the left mandibular area. A definite diagnosis was made on the eighth day. Modified fluctuation was elicited on the ninth day, and an x-ray treatment was given, which eased the pain somewhat, but had no other effect. The orifice of the parotid duct was raised and red, but no pus could be expressed. On the twelfth day an incision was made, and three counter drainage openings were established. The parotid condition was healed at the end of five weeks. This patient did not remember whether or not he had had mumps in childhood.

CONCLUSIONS

1. The importance of fluid balance and adequate oral hygiene is stressed.
2. It requires nicety of judgment to determine which cases will need incision and which will not; it is wiser to incise too early than too late.
3. Acute surgical parotitis ipso is not a fatal disease if treatment is instituted early. The fact that it occurs in patients who are seriously ill has given the disease its bad reputation.

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INSULIN SHOCK THERAPY

A CURRENT REVIEW

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So much has been said and written about the use of insulin in non-diabetic psychotic states that an additional review would seem to be an unnecessary overload upon an already full and complete literature. However, a critical review published by Morse¹ in June, 1937, is already almost out-dated. New results and new interpretations are pouring constantly into the hopper, and the student of the condition and the treatment must read and analyze constantly so that new thoughts and new indications for varying treatment will not be overlooked.

To review again Sakel's original publications and method of inducing shock would indeed be trite. Torp² independently stumbled onto this treatment through a nursing error in 1930, and reported his one case in 1932 as an interesting observation, but he did not follow it up. Sakel began his work in 1933 and published his first report in 1934³, and several in 1935. His report in 1936⁴ recommends changes in treatment methods and classifies cases so that treatment can be varied to meet the clinical indications. Muller⁵ has made intensive studies and several reports. Wilson⁶ wrote a comprehensive analysis in 1936. Glueck⁷, Ross⁸, Young⁹, Wortis¹⁰, and many other American psychiatrists have been interested in this treatment from the beginning, and those

mentioned above have published comprehensive reports within the last few months.

In writing this review, accepted viewpoints are presented, and controversial points are analyzed. Technic and indications which are well established are not mentioned. Those interested can find them in the above mentioned publications. However, newer approaches are described in detail and new detailed examinations and findings are given. To conserve space, authors will not be mentioned. The present day conceptions are all found in the above publications.

Indications and Expected Prognosis. Insulin shock is a serious, abnormal physiologic state into which to throw a patient, and this treatment should be practiced only by skilled, experienced workers in adequately equipped hospitals. Even this safeguard and precaution does not completely eliminate the dangers. Therefore, the treatment should be reserved for two types of patients: those whom it should benefit, who might otherwise become hopelessly insane; and those who have become hopelessly insane and who can expect nothing in the future but a living death unless this treatment corrects their condition. It is now apparent that the American interpretation of schizophrenia must be changed if we are to be able to use this treatment accurately and scientifically. No one in this country has been able to match Sakel's and Muller's results because Sakel and Muller use Kraepelin's interpretations for diagnosis, which limit the cases to the old time dementia praecox, a more narrow definition than modern schizophrenia, which has grown into a catch-all. Thus, we find throughout all reports the thought that the delusional, hallucinating cases, with or without catatonic symptoms, respond much better to the treatment than milder cases. Apparently the more disorganized a case the better the results. The simple cases may be benefited, but it is not apparent.

In the second place, the apparent duration is of prime importance. All investigators report twice as good results on cases of less than six months' duration than on those of a longer duration. Of course, this is based upon apparent duration, that is, from the time friends and family noticed symptoms. Our first case was supposed to be of only three weeks' duration, yet the patient later told us that she had had hallucinations for about five years. She recovered completely. Since histories are usually obtained from relatives who are seldom aware of the true state of duration, resulting analyses may be misleading. Therefore, everyone feels that all patients are entitled to treatment if they have the symptoms of classical dementia praecox. The severe psychotic

states may be corrected and the patient returned to work, but no one should expect to eliminate the schizoid characteristics of the patient and make a new man or woman of an abnormal basic personality.

Technic. The newer concepts of technic diverge from standardization. More and more frequently we find individualization and exact clinical study advised, with all forms of examinations used to dictate the future course. The theoretically correct application is to terminate each daily treatment in that stage of the patient's development which is the most divergent from the symptoms. Thus, catatonics should be interrupted during activity; depressed patients during excitement; and delusional, hallucinating patients after prolonged comas. The treatment should not be given every day to every patient, nor should there of necessity be a regular rest day. The procedure must be varied daily to meet the indications. This is a new concept and many clinics have a standardized routine of giving insulin in heroic amounts to patients every day. One hospital builds every patient up to 200 units per day, every day, keeps them in coma one and one-half hours, and terminates with intravenous glucose. This is not only unnecessary, but unjustifiable. Only enough insulin should be given to produce the desired results in the individual case. This may be 30 or it may be 400 units. The length of time one should leave the patient in coma is dictated by the symptoms. Sometimes it should be one hour; again, as in one case under my care, it might be seven hours. Interruption should always be by mouth, except in emergencies. Improper treatment and interruption along mail order lines are dangerous to the patient, both physically and mentally.

New Findings and Thoughts. Laboratory and physical examinations done weekly may, early in the course of the treatment, prognosticate the expected results. Weight gains indicate a good response. When the patient begins to lose weight, treatment should be stopped temporarily. Usually patients gain weight, and undernourishment or malnutrition are not contraindicative for beginning the treatment. Both basal metabolism and the leukocyte count should increase during the procedure. Failure to do so indicates a poor response. These tests should be performed at least once a week, and if they have decreased or remained stationary, the patients should have a rest. The calcium-potassium index should remain constant, but there should be an increase in both elements. Variations of the index indicate a poor response. Blood sugar determinations are immaterial and of no significance. Reactions may

occur at 60 or may not be seen with a zero sugar count. Coma may occur at 30 or it may occur in the face of a rising blood sugar count. Pulse, blood pressure and temperature changes are not constant, and any combination may be found. During the reaction, all or any of the symptoms of abnormal neurologic function may be found. Their significance is not understood.

Complications. To date only three deaths have been reported. These are Sakel's original three. Careful observation during the entire twenty-four hours, understanding of the symptoms of impending danger, quick and scientific emergency methods, and a competent medical and nursing staff should eliminate fatalities. They are apparently unnecessary. Every author has discussed complications and emergency methods. Convulsions were formerly considered complications, but are now recognized as having a distinct therapeutic value. The patient in convulsions must be watched carefully, but indications for interruption are as in other patients. Inhalation of saliva and food matter seems inevitable. In the young, physically healthy patient, it is not dangerous. Accepted treatment for inhalation pneumonia plus new methods of attack used in cases of lung embolism seem to correct the situation quickly. We have had three cases, with recovery in about forty-eight hours. Insulin shock therapy is an heroic treatment, and courage is necessary. Without courage to go the limits of dosage and reactions, the procedure should not be started. Unless the medical staff is alert and the laboratory equipped and competent, complications will be frequent and deaths will be inevitable.

Numerous theories have been advanced as to why the induction of a serious physical disease should correct the psychotic symptoms of a purely so-called functional psychosis. None has been universally accepted. All authors seem to attempt to interpret mechanisms in light of their own past experience and their own concepts of psychogenic mechanisms, normal or abnormal. Thus, the pure functional thinker, the psychoanalyst, believes that the treatment is another application of Freudian therapeutic mechanisms. The organist, on the other hand, talks of biochemistry, metabolic and catabolic changes, and detoxification. As pointed out above, fundamental changes in the general physiology do occur during the individual treatments and during the whole procedure. It is apparent that during each treatment there is a great struggle on the part of the autonomic nervous system and the endocrine system to overcome the effects of the overdose of insulin and the hypoglycemia. This titanic struggle leads to violent surges of the para-

sympathetic and sympathetic components of the fundamental controlling mechanisms. First one is in predominance, then the other, and it is these surges and the predominant component which dictate the condition of the patient and the types of reaction. These efforts to counteract and their effects vary and fluctuate throughout the treatment, and from day to day.

It is the opinion of many that in these mechanisms lies in the secret of effect and results. Our next step forward is to investigate these reactions. Control of these phenomena may mean complete control of the treatment and perfect therapeutic results with elimination of all complications.

2625 The Paseo.

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HEARING TESTS IN IOWA SCHOOLS

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The prevailing demand by Iowa schools for hearing surveys with the group audiometer calls for an evaluation of the results obtained thus far. Although the State University of Iowa has owned the Western Electric 4-A audiometer for ten years and has demonstrated it occasionally through the auspices of the psychology department, extensive testing was not begun until two years ago. So many requests had come from superintendents and school health departments that a full time examiner for the hard of hearing was appointed by the psychology department. The examiner moved from town to town on an itinerary prepared according to requests of the schools.

As many as forty children were tested in inter-

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vals of twenty minutes with the audiometer. This instrument was designed by the Bell Telephone Laboratories at the request and from the prescription of physicians and educators interested in the discovery of hard of hearing children. It has been endorsed by the American Medical Association and the Academy of Ophthalmology and Otolaryngology. The audiometer is a special phonograph to which are attached forty receivers which are placed on the desks in a quiet room. The pupils hear numbers called at first with a loud voice and then with a gradually softening voice. The pupils write the numbers on charts and when they stop writing, it indicates they stop hearing. Two columns are called by a female and two by a male voice. The right ear is tested and later the left. Those failing are retested in groups and finally by an individual test. Thus each pupil is given ten or more chances to demonstrate the hearing efficiency of each ear.

The audiometer serves as a screen and detects all the pupils who are hard of hearing at the time of the test. Experiments have demonstrated that it discovers from three to five times as many as the watch-tick and whisper test methods commonly used. This is possible because of the standardized, controlled technic and the graduated scale whereby losses as small as three decibels can be measured. Fowler, Hayden and Newhart have advised that a child with a hearing deficiency as low as six decibels and with a history of ear troubles should be reported by the school physician or nurse to the parents, and that all pupils with a nine decibel loss or more should be reported. They urge medical examination to detect the causes in order to prevent increasing deficiencies.

A total of 46,095 pupils have been tested in 47 Iowa school systems since March, 1936. Return visits have brought the total of tests and retests to over 60,000. Pupils with a deficiency of greater or lesser degree numbered 3,330, making a ratio of one in fourteen. The incidence ranged from as low as three per cent to as high as twelve per cent in the various systems, although one building located in a poor economic district showed an incidence of twenty-two per cent.

Deficiencies ranged from six decibels to fifty-seven decibels in at least one ear. One quarter of the deficient pupils showed losses of at least fifteen decibels in one ear; and one quarter of them showed deficiencies in both ears. It can be estimated from this sampling of school population that there are 30,000 hard of hearing pupils in the state of Iowa, and that from 2,500 to 3,000 of these are having genuine difficulty in the school room as a result of serious defects in both ears.

Personal contacts with the latter and their teachers have revealed a situation which merits considerable thought and study on the part of physicians and educators. Very often regarded as unintelligent, the hard of hearing pupils were located in ungraded rooms or were floundering in the regular classrooms.

In some cities, forty-five per cent of the pupils were sent to physicians for ear examinations. Reports show that between sixty and eighty per cent of them were given treatment or operations, or recommended for treatment or operation. Medical histories showed eighty to ninety per cent reporting history of ear trouble. School health records showed forty per cent having questionable throat and nose conditions, with a range of thirty to sixty per cent. Nineteen per cent had wax occlusions. Many pupils who went to doctors were restored to normal or substantially improved. Deficiencies as great as twenty-seven decibels were corrected to normal after tonsillectomies. Others for obvious reasons did not improve under medical care. Pupils not sent to doctors returned to normal in some cases but others suffered increasing deficiencies over a period of retests. Restoration to normal of many deficient and the arrest of other potentially serious cases warrant a continuance of the hearing tests in the public schools.

The desirability of the surveys has been demonstrated by the discovery of many unsuspected hearing deficiencies and by the satisfying readjustments of the handicapped pupils in the school rooms. Finally, the knowledge that there is such a person as a hard of hearing child, that there are 30,000 in the state of Iowa, whose presence and need has heretofore not been acknowledged, is a challenge to physicians and educators.

UNUSUAL SYMPTOMS DUE TO ROUND-WORM INFESTATION*

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Two cases with similar and unusual symptoms attributed to round-worm infestation prompt this report. Symptoms commonly attributed to worms are restlessness at night, sleeplessness, grinding of the teeth, irritability, picking the nose, dirt eating, poor or abnormal appetite, pallor, twitching, motor paralyzes and convulsions. In addition, there are symptoms of acute indigestion or appendicitis, accompanied by abdominal pain, nausea, vomiting, passing of poorly digested food and mucus and sometimes intestinal obstruction. Occasionally, cough, dyspnea, bronchial asthma

*Presented before the Eighty-sixth Annual Session, Iowa State Medical Society, Sioux City, May 12, 13 and 14, 1937.

and pneumonia are attributed to round-worm infestation. Naming over such an array of symptoms and syndromes will, no doubt, prove to you that there are no symptoms which are pathognomonic of round-worm infestation. The following two cases show rather unusual symptoms of similar character.

Case 1. R. A., seven years of age, was seen on January 3, 1936, with the complaint of his parents that he made a rather peculiar, loud, crowing sound and was nervous. About three years previously the parents first noted a peculiar throaty sound. This sound seemed involuntary on the part of the child and seemed to be a cross between a cough and a hiccup. At first this peculiar noise was noted only during the winter months and did not seem serious. At times the noise resembled a grunt. During the last two winters he seemed unusually nervous and had involuntary jerking movements, limited usually to the shoulders. The peculiar noise or bark seemed to be produced in the larynx. It had stopped at night and slowed up somewhat, if the child's attention was diverted. With lagging interest the bark reappeared, sometimes with remarkable regularity and loudness. The parents had noted that whenever this peculiar noise or bark occurred, the child would stop walking or stop whatever he might be doing. Physical examination was essentially negative except for a moderate anemia and some nasopharyngeal infection. Laboratory examination showed a definite anemia, no eosinophilia and numerous *Ascaris* ova in the stool. Fluoroscopic examination of the child while he was having this peculiar bark revealed a definite spasm of the diaphragm preceding the throat noise. The lung fields appeared negative to fluoroscopic examination. The patient was treated for round-worm infestation and within about three weeks the peculiar noise and diaphragmatic spasm had subsided.

Case 2. W. D., six years of age, was first seen on July 26, 1935, for a peculiar cough of about three weeks' duration. The parents stated that there was no "cold" previous to the cough. The cough, which seemed to be a cross between a cough and a hiccup, sometimes nothing more than a hack, was present rather constantly during the daytime and uncontrolled by the usual cough medications. After about one week of coughing the patient was examined by a physician, who found a high eosinophilia and thought the child might have a parasitic infestation. At that time two capsules of hexylresorcinol were given. The parents saw worms passed in the stool and the peculiar noise seemed improved for a time. After about ten days coughing recurred. Physical ex-

amination was essentially negative. On watching the child's peculiar cough, it was noted that the noise seemed to accompany a diaphragmatic spasm occurring in the middle of a respiratory motion. Stools were examined and showed ova of *Ascaris lumbricoides*. After a series of about three treatments with hexylresorcinol, the symptoms disappeared entirely.

The symptoms produced by round-worm infestation are due to several factors, including the intensity of the infestation, the susceptibility of the patient to the toxic by-products of the worms, and to other factors as yet unknown. In order to have some understanding of the symptomatology of *ascaris* infestation, one must have some knowledge of the life cycle of this parasite.

The adult worms are elongate, cylindrical in shape, tapering at both ends and varying in size from six to fourteen inches in length. The normal abode of the adult *ascaris* is in the lumen of the small bowel. Under unfavorable conditions it may wander into the stomach, be vomited, escape through the nares or be passed in the stool. Each female worm, whether fertilized or not, lays an enormous number of eggs each day, varying probably between one hundred and two hundred thousand, so that the infestation in which at least one female is present may be readily diagnosed by microscopic examination of the feces. The fertilized egg is passed in the one cell stage. Outside the body it is resistant to most types of chemicals as well as extreme dryness. Direct sunlight and moist heat of 80 degrees, centigrade, that is, 176 degrees, Fahrenheit, or above are lethal. When discharged in feces, these eggs require several weeks to complete embryonation. Once fully embryonated they remain viable for many months. Such embryonated eggs and not those recently discharged in the feces are the infective stage for man. On being swallowed, the eggs pass into the small intestine where they hatch and the motile larvae crawl out. The motile larvae penetrate the intestinal wall into the mesenteric veins or the mesenteric lymphatics and are transported in the blood stream through the right heart to the lungs. Here several days are required for them to break out of the pulmonary capillaries into the air spaces and after a period of growth these larvae are carried up the respiratory tree, over the epiglottis and down again through the esophagus and the stomach to the small bowel where they develop into adult worms. The incubation period in man, that is, the time from the ingestion of the embryonated eggs until the maturity of the worm, is approximately two to three months.

It is rather easy to see how, during the course

of this larval migration, the child might have peculiar symptoms, such as restlessness, abdominal pain, coughing, dyspnea and vomiting. One can also see how the mass of adult worms might produce intestinal obstruction, or migrate into the common bile duct or into the appendix, or perforate the intestinal wall. There are also cases on record of laryngeal and tracheal obstruction, abscesses of the liver, abscesses of the abdominal wall, worms found free in the pleural cavity and free in the abdominal cavity. It is rather difficult, however, to see why some of the symptoms, particularly those related to the nervous system, should occur, unless there is a definite toxin produced by the ascarides. The diaphragmatic spasm reported in the two cases above is difficult to explain on the basis of the presence of larvae in the diaphragm and for that reason one must fall back on the toxin theory for its production. Larvae outside of the intestinal tract are not influenced by the administration of anthelmintics, so prompt relief of symptoms would not be expected if the spasm were due to larvae in the muscle.

The diagnosis of round-worm infestation is based on the finding of fertilized or unfertilized ova of the worm in the stool. It is to be regretted that stool examinations are done so infrequently and it is likewise to be regretted that so many doctors of medicine inform their patients that round-worms do not infest the human being. The examination of the feces in ascaris infestation is usually not difficult because whenever there is a female worm present, the eggs are numerous. In a case where male worms alone are present in the intestinal tract, the eggs, of course, will not be found and the diagnosis must be made on symptomatology alone.

Time does not permit me to enter into the subject of treatment of round-worm infestation, but in passing, let it be mentioned that the drug of choice is hexylresorcinol in crystalline form. The dosage for children is two to four 0.2 of a gram tablets taken into the empty stomach with water. Food is then withheld for about five hours, after which the usual diet may be resumed. A moderate catharsis should be produced by administering a saline within twenty-four hours.

SUMMARY

1. Many of the symptoms attributed to parasitic infestation may be due to other causes.

2. Two cases showing rather unusual and previously undescribed symptoms are presented.

3. An understanding of the life cycle of the ascaris is necessary in interpreting the symptomatology.

4. Diagnosis is positive only on the finding of the ova of *Ascaris lumbricoides*.

5. In treatment, the drug of choice at present is hexylresorcinol.

Discussion

Dr. Nelle T. Schultz, Humboldt: The first case reported by Dr. Stahr was the one which I referred to him, but I did not make the diagnosis. I missed it entirely, and I feel the reason I did is that I was not well enough acquainted with the manner in which ova appeared in the stools. Consequently, I went to a veterinary in Fort Dodge, Dr. Smith, who is connected with a serum company, and got some stool specimens of dogs to examine. He referred me to an article in a veterinary journal which gave a very simple and very helpful method of concentrating the ova in the stools. Since that time I have had several cases of round-worm infestation which I have not had to refer.

The method takes about five minutes and is very helpful. A pound of granulated sugar is mixed with twelve ounces of water; a little phenol is added to act as a preservative. About a gram of the stool is mixed with enough water to liquefy it in a beaker. This stool is then strained through an ordinary tea strainer to remove the coarse particles. A centrifuge tube is then half filled with this fecal material which has been strained and diluted a little bit with water, and to this are added equal parts of the sugar solution. This, then, is centrifuged for about three minutes, at a moderate speed. At the end of this time one should take a glass rod, the end of which has been flattened as follows: an ordinary glass rod is heated over a Bunsen burner, after which one end of it is pushed against a piece of wood. This flat part of the rod is then placed just to the surface of the centrifuged material and pulled out quickly. A drop will adhere to the end of the glass rod and any ova are easily seen when this specimen is placed under a microscope.

In case some of the rest of you have had trouble with stool examinations, I merely want to pass on this method of concentrating the ova in the stools. It really works, and these ova will float to the top and can very easily be picked off by this flattened glass rod.

Dr. Roy M. Conmey, Sergeant Bluff: The round-worm is most commonly found in the tropics but has been demonstrated in all countries, with the single exception of Iceland. As infestation is usually spread through contaminated soil the infection is more commonly found in rural districts than in cities. It has been demonstrated that the developed embryo within the egg shell will live in the soil for five years and then hatch when taken into the intestinal tract. The young of all animals show a greater susceptibility to worm infections than do adults. As has been stated by Dr. Stahr, the migration of the larvae is so extensive and the toxemia so marked it is no small wonder that the symptomatology is both

weird and complex. It has been stated the infection is so common in some provinces of China that the usual treatment for bronchitis is the use of a vermifuge. Frequently there are no symptoms and the condition is only discovered when the worms are expelled during the course of some intercurrent febrile disease. It is to be regretted that examination of the feces, while not difficult, is perhaps the most neglected field of diagnosis available to the general practitioner, and in many instances it is only by this method that a positive diagnosis of round-worm infestation can be made. I wish to compliment Dr. Stahr upon his most able presentation of the subject now under discussion.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

PRURITUS ANI

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Pruritus ani is at times so severe as to cause the afflicted individual to go to great lengths in search of relief.

There are many causes of pruritus ani. Some of the local causes of pruritus ani are hemorrhoids, anal fissures, fistulae, fungous and other local skin infections. General causes such as constipation, anemia, diabetes, menopausal changes, pregnancy, and others, play an unimportant part. Discovery and treatment of the local or general cause do not as a rule result in the disappearance of the pruritus. In most instances no local or general cause can be found and a cutaneous neurosis is assumed to be the cause. The sexes are affected equally and the subjects are commonly those in middle or late life.

The onset of the pruritus is usually insidious and the itching persists for months or years. It is usually worse at night and when one is warm. It is least troublesome in the morning and when the attention is diverted to other subjects, but is present throughout the day. The intensity of the pruritus is sometimes relieved only by producing sufficient trauma to change the sensation from itching to one of burning and smarting. These paroxysms of itching are of varying duration and may be precipitated by influences such as mental distress, a draft of cool air, the warmth perceived when in bed, the pressure of clothing and often the substances applied for relief. In a well-marked case the impulse to scratch is often irresistible. Many patients restrain themselves and avoid scratching when awake, but while asleep inflict serious damage to the skin.

In mild cases there may be no visible changes, but as the itching becomes worse the skin takes on the characteristics of a traumatic dermatitis. In the beginning there is transient erythema which later becomes permanent. When relief is sought the skin is thickened, whitened and sodden with excoriations and crusting. In long continued cases lichenification is present. These locally induced skin changes may of themselves cause itching.

Associated local conditions, such as hemorrhoids, should be treated but this will not result in disappearance of the pruritus. Treatment of any constitutional condition should be carried out but there probably will be no effect on the local pruritus. In all cases the essential element is neurogenic.

TREATMENT

Acetylsalicylic acid and phenobarbital are probably the least harmful and most efficient of internal remedial agents and may be given in the evening to control the attacks of itching which occur at night.

The local management of pruritus ani requires frequent and careful attention to details. The garments worn next to the skin should be of cotton, lisle thread, linen or silk, and never of wool. Soap, water and all other irritants should be avoided. A bland oil such as cottonseed, olive or mineral oil should be used for cleansing. A soft tissue must be used after bowel movements. Irritation from rubbing and scratching must be eliminated. It may be necessary to wear gloves at night to prevent excoriations. Locally the more stimulating ointments and antipruritic lotions are used. One per cent phenol in calamine lotion, N. F., should be applied when necessary during the day. Two useful ointments are: the oil of cade ointment whose formula is salicylic acid 0.36, menthol 0.36, Ppt. sulphur 4, zinc oxide 8, oil of cade (Muth and Co.) 7, starch 14, and petrolatum to make 100; and the menthol ointment whose formula is menthol one per cent, salicylic acid one per cent, starch twenty-five per cent, and petrolatum to make 100. These are best used at night. A "T" binder may be used to avoid soiling the linens. All but the most severe cases can be managed satisfactorily in this manner.

If the condition is persistent, relief can be obtained by more radical treatment. Surgical procedures such as cutting nerves or removing portions of affected skin are generally ineffective.

X-ray treatment in addition to local treatment is frequently successful. A dosage of 75 to 160 roentgens at five to ten day intervals for a total of not more than 400 roentgens may be given. This amount of x-ray may be repeated at inter-

*From the Department of Dermatology and Syphilology.

vals of six months or a year but the grand total of roentgens should not exceed 1600 in the course of a lifetime. When x-ray treatment is evoking a response, usually only a few exposures are needed, for which reason the giving of a large number is deprecated.

The subcutaneous injection of long acting anesthetics has been practiced for many years. With injection of alcohol, sloughing must be expected in half the cases and constant observation for six weeks is required. This is frequently followed by regeneration of the nerve fibers and recurrence. A more suitable agent for this purpose is benacol which is five per cent anesthetic and two per cent butyl alcohol in oil of sweet almonds. This is obtainable in three cubic centimeter ampoules and a total of six cubic centimeters is usually injected at one time. This treatment can be given to the patient in the office without any incapacitation.

The skin is cleansed with tincture of green soap and sterilized. The ampoule, which has been warmed in hot water to facilitate the flow of oil, is drawn into a five cubic centimeter sterile glass syringe through a large caliber needle. The needle is then changed to one of gauge number 20, two inches long. The perineal region is divided into four quadrants and usually a posterior quadrant is chosen first. The patient should lie in the Sim's position on the side selected for the treatment. A wheal is raised in the skin with procaine about one-half inch outside the affected area. For this a separate syringe and a number 25 gauge needle are used. The needle through which the oil injection is to be made is then inserted through the wheal. The needle must be freely movable at all times and should be kept moving and the injection given slowly and evenly in a fan-shaped manner. Care must be taken to inject subcutaneously. The injected tissues are massaged gently for about three minutes with a sterile piece of gauze, which assures an even distribution of the oily solution. The other quadrants are treated in a similar manner after a few days. No general reaction to the treatment has been known to occur. The external sphincter muscle should not be injected because the anal canal may become patulous and temporary loss of control take place. If care has been taken to make the injection subcutaneously rather than intradermally, sloughing will not result.

The contraindications are few and infrequent but well defined. It should never be used in acute abscesses, or suppurative processes of any kind about the rectum, in fistulae or fissures with abscesses, in strangulated or sloughing piles, in

those suffering from diabetes, in the markedly anemic individual, or in the debilitated patient where tissue repair is poor.

Relief is usually instantaneous and may be expected to last from one to several months.

SUMMARY

Pruritus ani is thought to be due primarily to a cutaneous neurosis. The skin changes are those of a traumatic dermatitis. If more than palliative local treatment is necessary a method for the subcutaneous injection of benacol, the use of which has been quite encouraging, is recommended.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CHRONIC HEMOLYTIC JAUNDICE; CURE BY SPLENECTOMY

A. B. NESLER, M.D., Dubuque

The case to be presented is of interest because mild jaundice is always an interesting diagnostic problem and because of the favorable outcome following splenectomy.

CASE REPORT

Chief complaint: The patient, a white, married woman twenty-eight years of age was admitted to the Finley Hospital, November 1, 1933, because of a "cold with cough, aching throughout the entire day, tired feeling and nausea of three days' duration".

Family history: The patient's mother had died of heart disease; her father of cancer of the stomach. Five sisters and two brothers were well. There was no history indicating tuberculosis, diabetes, insanity, epilepsy or apoplexy in the family. No other members of the family were ever jaundiced.

Past history: The patient had had chicken pox, measles, mumps, and bronchopneumonia in early life. Six months before admission she had had a miscarriage from an unknown cause. Five years previously she had had an attack of influenza. Answers to specific questions in regard to symptoms referable to the pulmonary, gastrointestinal, genito-urinary, and nervous systems were essentially negative. Menstruation had begun when the patient was fifteen years of age. Since that time it had occurred in a regular twenty-eight day cycle, lasting four days, and without pain.

Personal habits: The patient stated that she had not felt well since her attack of influenza five years ago. During convalescence which was prolonged she developed jaundice and was treated for gallbladder disease. Since that time she had had several attacks of mild jaundice but had not attached much importance to them. The attacks of jaundice were accompanied by fever and weakness which were attributed to "catching cold." She had noticed that after each attack she became more anemic. Four months before admission she was first seen during an attack. At that time jaundice was definitely present, and the spleen could be easily palpated as a smooth, firm mass estimated to be about four times the normal size. A blood examination showed a white blood count of 9,000; a red blood count of 3,986,000; hemoglobin, 72 per cent; and a color index of 72. The differential count showed 71 per cent neutrophils with the other cells within normal limits. The red cells varied somewhat in size and shape and many were smaller than usual. Achromia was slight. The icteric index was 25. A urinalysis was negative and the urine did not contain bile. An x-ray examination showed a normally functioning gallbladder. Her present attack was similar to previous ones.

Physical examination: The patient was a well developed and well nourished white woman weighing 133 pounds. The skin was clear but slightly jaundiced. The temperature was 101.5 degrees; the pulse, 80; and the respirations, 20 per minute. The conjunctivae were distinctly jaundiced, but the pupils were equal and reacted to light and accommodation. The hair was abundant and fine, but dry. The nose and ears were negative. Eleven teeth were filled, four had been extracted; the second lower molar showed a large cavity, but the mouth hygiene was good. The tonsils were small and there was no cervical adenopathy. The thyroid gland was not enlarged. The chest was symmetrical and expansion was equal on each side. The breasts were fairly well developed and no masses could be felt. The nipples were inverted. The heart was enlarged to the mid-axillary line. On auscultation a loud systolic murmur was heard over the aortic area. On percussion the lungs were normal but auscultation revealed numerous squeaky râles at each apex. The spleen was easily palpated as a smooth, firm mass but there were no points of tenderness. The uterus was within normal limits of size and in second degree retroversion. The tubes and ovaries were negative to palpation.

A blood examination showed a white blood count of 9,400; a red blood count of 2,920,000; and hemoglobin, 50 per cent. The blood smears

were notable because of marked poikilocytosis and a high percentage of microcytes. The bleeding and coagulation times were normal. A fragility test showed hemolysis beginning at 0.6 per cent and complete at 0.42 per cent (normal, 0.44 per cent to 0.34 per cent). A blood platelet count was normal. Reticulocytes were 2.4 per cent (normal, one per cent). A positive, indirect van den Bergh reaction was obtained and quantitatively the blood bilirubin was 5.5 milligrams per 1,000 cubic centimeters (normal, one milligram). The urine also gave a positive test for urobilin.

Clinical diagnosis: A clinical diagnosis was made of chronic hemolytic (acholuric) jaundice and secondary anemia.

Course in the hospital: The patient was given one transfusion of 500 cubic centimeters of blood by the direct method, and on the following day splenectomy was done. The next day another transfusion of 500 cubic centimeters of blood was given. The patient made an uneventful recovery and left the hospital on the eighteenth day after the operation.

Pathologic examination: The spleen weighed 550 grams. The capsule was clean, but tense. On section the resistance was normal and the cut surface was dark red due to intense congestion. The malpighian corpuscles could not be differentiated because of the congestion; there was no increase of fibrous tissue and there was no apparent pigmentation. On microscopic examination only intense congestion of the pulp was evident. The spleen was considered to be typical of hemolytic jaundice.

Subsequent history: For about four months the patient complained of dizziness, the cause of which could not be discovered. It gradually disappeared with only general treatment. Three blood examinations during this period were reported as follows: the first on January 22, white blood count, 7,800; red blood count, 5,120,000; hemoglobin, 98 per cent; differential, normal; icterus index, 5; reticulocytes 20,200; red cells and platelets, normal in appearance; the second, on February 12, red blood count, 4,920,000; hemoglobin 82 per cent; and the third on April 13, red blood count, 4,580,000; hemoglobin 80 per cent.

On June 9, 1934, eighteen months after the operation, she received fractures of each ramus of the pubic bone and of the right sacro-iliac joint in an automobile accident. Following the accident the patient lost considerable weight and the hemoglobin was 84 per cent. On June 7, 1937, three years later, the patient was delivered of a son by cesarean section. The latter was necessary because of the injury to the pelvis. At that time

except for a slight increase in the fragility of the red cells the blood examination was essentially normal. Since that time the patient has enjoyed excellent health and has gained in weight and strength. There has been no recurrence of the jaundice, and incidentally her son has never been jaundiced.

GENERAL DISCUSSION

Hemolytic jaundice is known in the literature as congenital hemolytic anemia, chronic hemolytic jaundice, familial jaundice, constitutional jaundice and acholuric jaundice.

Both congenital and acquired forms of the disease are recognized. Some authorities believe that each type is fundamentally congenital in origin. The principal difference between the two is the age at the time of the onset; in general the course of the acquired type is more severe. In the congenital type the patients are not troubled by the jaundice and life is not shortened. Except in crises their ordinary activities are not interfered with unless an enlarged spleen is present. The course in the acquired type is more severe and often may be fatal. Anemia is more marked and the red cell count may fall to 2,000,000 or below.

The jaundice results from increased destruction of red blood cells. Whether this is due to decreased resistance of the erythrocytes to the normal hemolytic processes of the body or to abnormally increased hemolysis related to splenic activity (hypersplenism) is not definitely known and is of little clinical importance. A more important diagnostic point is a mild jaundice which may be present at birth or which rarely occurs after twenty-five years of age. This condition is often accompanied by malaise, headache, mild fever and slight constitutional debility. Anemia of a secondary type is variable in degree, but may be severe.

The diagnosis is made from the history, the detection of a symptomless mild jaundice, an enlarged spleen, and from laboratory examinations. The urine does not show bile but contains an excessive amount of urobilinogen and urobilin, as does the feces. The icteric index may be increased to 100; the indirect van den Bergh reaction is positive; the direct reaction is negative. The reticulocyte count is between five and 35 per cent in most cases, but may rise as high as 95 per cent. The fragility of the erythrocytes is increased to between 0.6 per cent and 0.40 per cent (normal, 0.42 to 0.30 per cent).

In the treatment of chronic hemolytic jaundice, splenectomy is recognized as the procedure of choice. As high as 86 per cent has been reported as being returned to essentially normal health, fol-

lowing operation, which should be performed between crises. Transfusions of blood should be given before operation. The operative mortality rate is about five per cent.

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2. Barron, M.: The differential diagnosis of jaundice with special reference to congenital hemolytic jaundice. *Minnesota Med.*, xv:479-484 (July) 1932.

IOWA PEDIATRIC CLUB

The first annual meeting of the Iowa Pediatric Club will be held at the Hotel Fort Des Moines, in Des Moines, Friday, April 8, with a full day's program opening at 9:30 a. m. Guest speaker for the session will be Julius H. Hess, M.D., professor and head of the department of pediatrics in the Medical College of the University of Illinois. Dr. Hess will conduct a clinic in the morning, and speak at the evening meeting on Chicago's plan for the care of premature infants. Members of the profession are cordially invited to attend this meeting. The complete program is as follows:

The National Program on Maternal and Child Health
Walter L. Bierring, M.D., Commissioner of Health
Demonstrations in Pathology
Donald H. Kaump, M.D., pathologist,
Iowa Methodist Hospital

Acute Primary Tuberculosis—Case Report
Dennis H. Kelly, M.D.

Medical Problems in Juvenile Court Work
Arnold M. Smythe, M.D.

Intestinal Hemorrhage—Case Report
Lee F. Hill, M.D.

Meningitis—Case Reports
James E. Dyson, M.D.

Nephrosis—Case Report
Fred Moore, M.D.

Clinic
Julius H. Hess, M.D.

Brain Tumor—Case Report
Walter D. Abbott, M.D.

Clinical Discussion
Frank A. Ely, M.D.

Luncheon and Business Meeting

Nutritional Studies
P. C. Jeans, M.D., J. D. Boyd, M.D.,
and M. L. Floyd, M.D.

Morbidity and Mortality in Iowa Children
J. M. Hayek, M.D.

Epidemic Sore Throat and Scarlet Fever—
Clinical and Epidemiologic Studies
Fred Sternagel, M.D., and T. E. Evers, M.D.

Quarantine Measures
H. E. Ransom, M.D.

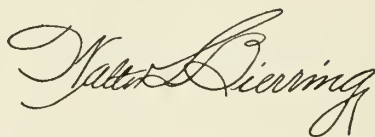
Foreign Bodies in the Respiratory Tract—
A Moving Picture Demonstration
James E. Downing, M.D.

Audiometer Group Tests—A Panel Discussion
Warren H. Gardner, Ph.D., James A. Downing, M.D., Cecil C. Jones, M.D., and Fred Moore, M.D.

Banquet and Evening Meeting

Chicago's Program for the Care of
Premature Babies
Julius H. Hess, M.D.

STATE DEPARTMENT OF HEALTH



Serologic Tests at the State Hygienic Laboratory

M. E. BARNES, M.D., Iowa City, Director

The nationwide campaign against syphilis has developed an unusual public interest in and even an insistence upon the employment of serologic examinations. In fact, there is a general belief among the laity that a positive serologic report is absolutely diagnostic of syphilis. It is, therefore, of the utmost importance that the physicians and the serologic laboratories be prepared to meet the responsibility imposed upon them.

Physicians should understand clearly the value and the limitations of serologic examinations in the diagnosis of syphilis. In this connection, it may be pointed out that the serologic tests determine only whether the serum contains certain substances which are detectable by the tests employed. These substances are found with phenomenal constancy in the serum of those who are suffering from luetic infection. They are found also quite commonly in cases of malaria, leprosy, relapsing fever, trypanosomiasis, and yaws. They are found inconstantly in individuals suffering from various other diseases or conditions. The important thing is that the presence of these substances in a positive serum *must be explained*. If a serum is definitely and unquestionably negative, the physician may make a diagnosis of syphilis, but if he does so it must be based entirely upon other evidence than is afforded by the serologic report. If the serum is definitely and unquestionably positive, that is, if it has been found positive by more than one method of testing, and on more than one occasion, the first, but

not the only disease to consider in differential diagnosis, is syphilis. These considerations make it evident that the physician is the only one who can properly use the laboratory reports in arriving at a diagnosis.

The laboratories bear a very heavy responsibility with respect to the reliability of their reports. On the one hand, it might be a serious matter to send out a negative report on serum from an actually infected case. On the other hand, a positive report carries with it a suspicion of syphilis, so that every positive report is a serious matter. It is of the utmost importance, therefore, that the serologic laboratories use only those tests which have been demonstrated to be reliable, that their reports be based upon more than one test, and that their efficiency of operation be adequately checked. It will be of interest to the physicians of Iowa to know what procedures are employed to safeguard the dependability of reports at the State Hygienic Laboratory.

As has been mentioned, the serologic tests are designed to determine whether certain substances exist in the serum. These substances may be detected by precipitation tests, such as have been described by Kahn, Kline, Eagle, and others. They may also be detected by complement fixation tests, such as the original Wassermann, and the more recent Kolmer reaction. Inasmuch as there is a quantitative variation in the concentration of these substances in the sera, the originators of these various tests have attempted to bal-

ance the sensitivity of the reactions in such a way that positive reactions will certainly occur within the range of concentration prevalent in syphilitic sera and, if possible, only within that range. The "diagnostic" tests are designed to indicate that the reaction is within the luetic range. If the sensitivity is increased, reactions will occur in lesser concentration. This is true of the "presumptive" tests, which indicate to the physician that the reacting substances are present but in too low a concentration to have definite diagnostic value. "Exclusion" tests are merely super-sensitive presumptive tests used as a screen to separate negative reactions from the possible positive reactions. At the State Hygienic Laboratory at the present time, four tests are used, two being based upon precipitation tests (Kahn and Kline), and two upon complement-fixation tests (Kolmer and New York exclusion tests).

The first step is to separate the negative from the possible positive reactions. For this purpose, each specimen examined is subjected to the Kline diagnostic test and to the New York exclusion test. Those found completely negative to both of these extremely sensitive tests (representing precipitation and complement fixation reactions, respectively) are tested no further, but are reported forthwith as negative. All specimens which give any reaction whatsoever, no matter how slight, to either or both of the above mentioned tests, are examined further by the standard and presumptive Kahn and Kolmer technics, provided there is sufficient serum available. Physicians are urged to *fill* the tubes provided in the mailing outfits so that serum will be available for all necessary tests. It will be observed that in the final reports on each serum specimen, there are available the results of at least two, and in most cases all three, of the recognized diagnostic tests described by Kline, Kahn and Kolmer. In addition, where it would seem to be of any particular value to the physician, the report carries the results of the Kahn presumptive test, which is more sensitive than the standard Kahn test. These details are mentioned to show that all serologic reports emanating from the State Hygienic Laboratory are based upon more than one type of examination. The tests provide a needed control over each other, as to the reactions found.

A further check upon the efficiency of the laboratory has been made possible by the United States Public Health Service. Our own laboratory is participating with other state laboratories for the third consecutive year in checking the specificity and sensitivity of the tests employed. Only by such means can the efficiency of a given laboratory be determined. Through this widespread collaboration, the United States Public Health Service hopes to establish throughout the country a greater degree of uniformity in laboratory procedures and reports.

The considerations presented above apply particularly to the use of the serologic laboratory as an aid in the diagnosis of syphilitic infection. The employment of the various tests provides a valuable aid also in following the results of treatment, which no single test can satisfactorily measure.

QUARANTINE REMOVED FROM SCARLET FEVER

Rules and regulations of the State Department of Health with respect to scarlet fever and septic sore throat have been revised so as to make these diseases subject to isolation instead of quarantine. The change was advised by all members of the State Board of Health, of which E. M. Myers, M.D., of Boone, is president. State health officials believe that the change from quarantine to isolation for scarlet fever, will bring about more adequate medical care, more complete reporting of cases and more effective control of all persons with evidence of the disease. The change in administrative control of scarlet fever, septic sore throat and other throat infections caused by streptococcus hemolyticus will become effective March 15, 1938.

PREVALENCE OF DISEASE

	Jan. '38	Dec. '37	Jan. '37	Most Cases Reported From
Diphtheria	22	27	15	Page, Linn
Scarlet Fever	993	936	621	Polk, Marion, Pocahontas
Typhoid Fever	2	1	3	Monroe, Winneshiek
Smallpox	243	171	92	Wapello, Appanoose, Mahaska
Measles	226	37	17	Scott, Johnson
Whooping Cough...	170	113	72	Dubuque, Sac, Linn
Cerebrospinal Meningitis	8	2	4	Polk, Jasper
Chickenpox	517	437	283	Dubuque, Woodbury
Mumps	54	31	149	Dubuque, Woodbury
Influenza	15	20	8,136	(For State)
Poliomyelitis	1	2	1	Plymouth
Tuberculosis	52	50	39	(For State)
Undulant Fever	7	8	6	(For State)
Gonorrhea	162	183	132	(For State)
Syphilis	301	307	131	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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*Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines*

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII MARCH, 1938 No. 3

MILK-BORNE EPIDEMICS

A recent epidemic of scarlet fever and streptococci sore throat in an Iowa community with a population of 4,000 is another sad object lesson. Some 500 cases were traced to a hemolytic streptococcus mastitis of one cow from a dairy delivering raw milk in the community. A serious epidemic of equal proportions and of a similar origin was reported from Oswego, New York, during the past year.

It has been recognized for years that milk is a favorable vehicle for the transmission of virulent pathogenic organisms. In one community in England during the past year a milk-borne epidemic of typhoid fever resulted in 900 cases with fifty-one deaths. Thanks to the splendid work of the veterinarians, bovine tuberculosis has been practically eradicated in this country, but in England where affected cattle have been isolated, but not killed, from 2,000 to 2,500 deaths from bovine tuberculosis in children are recorded annually. The frequent occurrence of brucellar infections as the result of the consumption of raw milk from infected cattle is an all too common experience.

In addition to the transmission of pathogenic organisms, various types of bacteria producing mastitis in cows are considered non-pathogenic for men, but the toxins in the milk originating from these organisms are capable of producing toxic gastro-enteritis. The filtrates of cultures of these organisms produce gastro-enteritis when ingested by human beings. Unfortunately the mere physical examination of cows with mastitis cannot differentiate between harmless and virulent types of infection, and bacterial culture must be employed. Every case of bovine mastitis must be considered potentially dangerous from the standpoint of public health.

Whether the organism in milk is human or bovine in origin the brief for pasteurized milk is clear. Proper pasteurization of milk destroys the pathogenic organism and makes the product safe for human consumption. Furthermore, according to McCollum, pasteurization does not appreciably affect the nutritive properties of milk. In an epidemic of milk-borne typhoid fever in Iowa several years ago it was found that the offending dairy pasteurized the milk thoroughly and properly, but the bottles were washed in tepid water and never sterilized. Regular and intelligent inspection of dairies should preclude such an occurrence.

How many object lessons, how many serious epidemics must we experience before something is done about it? If the physicians of this state educate their patients in the hazards of consuming raw milk something will and can be done to prevent the repetition of these unnecessary health hazards.

THE MEDICAL PROGRAM OF THE FARM SECURITY ADMINISTRATION

As each governmental agency operates, it seems to feel that it is paternalistically obligated to supply medical services to its clients. The farm security officials in Iowa discussed this matter with the Medical Economics Committee of the Iowa State Medical Society in July, 1937. The committee laid down certain principles which it felt should be adhered to in making any medical plan, and on the whole the FSA has done unusually well in fulfilling these requirements.

The FSA undertakes to rehabilitate the farmer by education, by supervising his farming operations, by advice as to the expenditure of his income, and by loans to get him started. In addition, the home is inspected, and advice given as to clothing, food, recreation, and health. The final aim is to have the client completely out of debt in five years, and educated to farm intelligently, live reasonably and be accustomed to paying his debts.

In attempting to obtain medical services within the reach of the income of these clients the FSA enters into a verbal agreement with those members of the county medical society who desire to care for these patients. Each client selects the doctor of his choice. The FSA then gives to this physician a complete resumé of the financial status of the client, together with a statement of the amount of cash which he will have for the year. The patient and the physician then discuss the matter, and come to an agreement as to the amount of money which will probably be needed to care for his medical needs during the next twelve months.

This estimate is then given to the FSA repre-

sentative, who together with the client, makes arrangements for the money needed. This money is secured by the client, either by sale of live stock, or if necessary, through an additional loan. The money is put in the hands of a bonded trustee, picked by the medical society. Whenever the doctor is called by this client, he charges fees according to the schedule made by his county society. This bill is turned over to the trustee, paid in full, and charged against the account of the client-patient. At the end of the year, any balance is turned back to the client. This is not a prepayment scheme, but a budgeting of funds for possible medical needs. It assures the client of services, and the doctor of adequate remuneration based on the ability of the client to pay. The fact that any balance is returned to the client will reduce materially the tendency to request unnecessary services.

There is, however, one clause in the agreement which appears extremely undesirable. If the estimated fund proves inadequate, the doctor must agree to care for the family for the remainder of the year without pay. Thus there is ample opportunity for excess demands for services in every case where the funds are exhausted before the end of the year. The doctor's only safeguard is placing his estimate as high as is possible within the limit of the patient's income. He can also help, by his advice, in keeping the services down to the minimum consistent with good care. The FSA plan does not include major surgery, which will have to be provided for from other funds, and therefore, the chances of going over the estimate are greatly reduced.

The good features of the plan are that it is merely a budgeting of funds for possible medical care, it leaves the patient-physician relation as it always has been, and it trains the patient to feel that his doctor should be paid and a certain amount set aside each year for medical care. When these clients are rehabilitated they will still be in touch with their family physician, and will continue as paying patients.

The plan is in operation in Wayne County and is under consideration in several more, and its operation will be watched with interest.

NORTHWEST REGIONAL CONFERENCE

The Northwest Regional Conference, an organization composed of physicians from fourteen mid-western states, met at the Palmer House in Chicago on Sunday, February 13. A very timely subject, "Medical Care for All the People," had been chosen for discussion at the conference. The program was thoughtfully planned by Dr. R. L. Sen-

senich of South Bend, president, and Dr. Carl F. Vohs of St. Louis, secretary of the conference. The Indiana State Medical Association was host to the meeting this year. About one hundred and fifty were present at the luncheon, and the total number of physicians attending the conference during the day was between one hundred and seventy-five and two hundred. Iowa was very well represented, with ten or more physicians present. Because of the fact that all of the papers were very much worthwhile, and contained points which may be helpful to many county medical societies, a brief resumé of each paper will be given.

Dr. Herman M. Baker of Evansville, president of the Indiana State Medical Society, opened the conference with a talk on "Preventive Medical Care as an Activity of County Medical Societies." Quoting from Dr. Baker's paper, "The demand for better medical care does not come from foundations, nor from a few social workers. It comes from the people themselves. The medical profession alone is qualified to advise regarding medicine and its practice. In the past the physician has thought of his patient as a medical problem. Changing conditions have made it necessary for the physician now to see the patient as an economic or social problem as well as medical. This change in viewpoint is necessary, and the medical profession should do its part in helping solve the situation. The Indiana State Medical Association has decided to initiate a movement for better public health, rather than letting the demand come from lay organizations. Toward that end it has formulated a year's program during which time the JOURNAL will stress a certain disease each month, discussing the economic and social aspects of the disease as well as the medical. The same disease will be the center of attention for the county medical society, as well as all other committees and divisions of the state medical association."

Dr. Frank Gastineau of Indianapolis then discussed the manner in which the county medical society carried on this project, and showed charts illustrating the means by which the idea was stressed. "The county medical society follows the state medical association in stressing the subject for discussion that month. As an example of what we mean, let me illustrate. We have chosen as our subject for February the venereal diseases. Other subjects for the remaining months are pneumonia, diphtheria, maternal and child health, annual physical examinations, highway accidents, occupational diseases, cardiac diseases, crippled children, conservation of eyesight, tuberculosis, and smallpox. The county medical society enlists all health agencies in the county to cooperate in

the program. Lay talks, radio talks, and press releases stress the particular disease for that month. The program is kept in the hands of the medical profession."

Dr. A. M. Mitchell of Terre Haute described a public health exhibit prepared by one county medical society. This exhibit was made possible by the backing of the county medical society, and the cooperation of the nurses, dentists, social workers, Board of Health, and various other health agencies. Dr. Mitchell said that the State Medical Association might well help with the initial cost of such an exhibit, which might be shown in several counties of the state, with slight changes for local organizations. Such an exhibit, however, should be carried through by the county medical society, and the responsibility assumed by the medical profession alone.

In the open discussion which followed these three papers, the feeling was expressed that such a program might well be adopted by various state societies. By having the combined attention of several state societies, with their component county societies, focused on one disease during each month, the public would gain a much better understanding of the disease and the problems which it caused.

Dr. James C. Sargent of Milwaukee, president of the State Medical Society of Wisconsin, reported on the work being done in Wisconsin by a special committee, of which Dr. Raymond G. Arveson was chairman, appointed to determine the availability of rural medical care in that state. "Dr. Arveson and his committee are interviewing literally thousands of persons in making this survey. They are contacting the social workers, the nurses, the dentists, the health officers, the county engineers, the supervisors and other officials, the heads of Parent-Teacher Associations,—in fact, every person who has any reason to be interested in public health. Through this contact, they are getting a very comprehensive picture of the situation. Their report will not be ready until fall, and findings cannot be given out until that time. Two things of interest have been shown. One is that it is entirely possible to gain the cooperation and help of the various social agencies provided the medical profession is willing to go half-way; and the other is that in many instances care in rural communities is far better than it is in counties having a high urban population with a small rural fringe. In the mixed groups, persons living in the towns in the county get good medical care, but practically no provision is made for the rural area outside of the towns."

The next paper discussed was "Physical Reha-

bilitation of the Indigent" by Mr. Joe Savage, Executive Secretary of the West Virginia State Medical Association. "It has long been apparent that some of the heads of families on relief are there because of physical disabilities which might be remedied by surgery, but it has been difficult to obtain funds to correct these defects. Permission was given the West Virginia State Medical Association to experiment with ten individuals, eight of whom were on relief rolls because of hernias, and two because of orthopedic defects. A sum of one thousand dollars was set aside for the experiment. Surgery was done, and the ten were helped to get jobs and so removed from the relief roll, with a saving to the state of \$224.00 per family, the cost per year for relief per family in West Virginia. On the basis of this experiment, the 18,000 heads of families on relief in West Virginia were given physical examinations by doctors working in teams, at a cost of \$10,000. Seven thousand of them had remedial defects, 4,800 of them hernias. Operations were performed on 1,597 persons, with the result that 755 of them returned to active work, 498 are able to work but have not yet found employment, 344 operations failed to achieve the desired result, and the balance are in the convalescent stage. The cost for this was \$128,675, and the saving to the state by removing 755 from relief was \$169,120 for the one year only. The saving will increase each year, naturally. Dealing with the problem from a financial standpoint, it pays to rehabilitate these persons; but no figure can be placed on the humanitarian value of the work."

The Oakland County (Michigan) Medical Plan was presented by Dr. R. G. Tuck of Pontiac, Michigan. "Previous to 1934 the county supervisors contracted with a physician to take care of the indigent in the city, and the township supervisor had charge of hiring a physician to care for those who needed medical care in the rural area. The situation was unsatisfactory. In 1934 the Emergency Relief Administration established a Medical Division, and the County Medical Society appointed a committee to meet with the administrator and prepare a program. The relief administrator was very cooperative and saw our viewpoint. We wanted to create an opportunity to practice medicine in a normal manner, conducive to a good patient-physician relationship, with no dictation by other groups, and as little red tape as possible. We wanted to answer each call as it was made, without having to have it authorized by the social worker, and we agreed to file bills every seven days. The Relief Administration agreed not to change the fee schedule without the ap-

proval of the medical committee. One-half the regular minimum fee schedule was allowed.

"Many bulletins describing the plan were sent out, so that all physicians knew the procedure. The physicians were told not to interfere with the social workers nor the social problems involved. The attitude of the social workers changed to one of cooperation. Patients were told to call their family physician when they needed medical care. Each family had an identification card from the Relief Administration. The physicians were told not to allow unnecessary demands, but to ask the patient to be reasonable. Every effort was made at first to keep the cost low, and successfully. When we saw we could do the work for a reasonable cost, we enlarged the service so as to provide glasses for those who needed them, and some trusses, etc. The cost went up for that work, but is now decreasing again.

"The medical advisory committee is consulted each time a physician's bill is denied. If the committee believes the bill excessive, the bill is cut and the physician informed. Only one physician out of one hundred and fifty has proved uncooperative and had to be barred from participating. The medical profession must take this responsibility. Furthermore, it must cooperate with the social workers, soft-pedal the financial end, stress the importance of available medical care, and preserve the status of the family physician."

Questions from listeners brought forth the information that the cost per family in Oakland County is \$1.50 per month for medical care.

Dr. Carl F. Vohs of St. Louis then discussed the group hospitalization plan in effect in St. Louis. "Group hospitalization was sponsored by the county medical society, and it has been successful. It must be organized on proper principles, administered properly, and fit the needs of the community if it is to succeed, and it must have the cooperation of the medical profession. Any comprehensive plan for adequate medical care must include group hospitalization. Practice of medicine by hospitals must be excluded. The laws in various states regarding group hospitalization vary, and a uniform plan cannot be formulated. However, when the above principles are followed, we believe group hospitalization will succeed."

In the discussion following this paper, it was pointed out that it might be difficult to keep such hospitalization plans under the control of the medical profession and to keep them from expanding and including medical services in their contract. The dangers of group hospitalization were enumerated by several physicians.

The conference adjourned for luncheon at one o'clock, and following this, the nominating committee presented the name of Dr. Carl F. Vohs of St. Louis for president during the coming year, and that of Dr. F. F. Foster of Bay City, Michigan, for secretary. The report was unanimously accepted. The Missouri State Medical Association asked for the privilege of serving as host for the 1939 meeting, and it was so arranged, although the meeting place will continue to be Chicago.

Dr. R. G. Leland of the American Medical Association presented the first paper on the afternoon program. "The Board of Trustees of the American Medical Association recently adopted resolutions designed to assist and encourage state and county medical societies to collect information concerning medical needs and to formulate procedures to supply these needs in accordance with established policies and local conditions. The national office will supply forms for gathering these data by county medical societies, and will collect and compile the information after it is obtained. The surveys so far conducted do not tell the whole story. This one we plan should be comprehensive, and from it we hope to be able to formulate policies which may be adopted by county medical societies according to the local need. The survey is not a defense against attacks from the outside, but rather a continued offensive movement against disease."

The part played by the state medical society was discussed by Dr. Ernest E. Shaw of Indianola, Iowa. Dr. Shaw explained the formation and set-up of the medical plan of the Iowa Emergency Relief Administration, its advantages, and its drawbacks, and told of its discontinuance. He said it seemed impossible to formulate a plan which would work equally well in all sections of the state. What worked satisfactorily in a rural community would not work in an urban or mixed community. He also explained the part the state society has played in conferring with officials of the Farm Security Administration. "In my opinion, the State Society should act as a clearing house for ideas. The Medical Economics Committee should be very active in every state society. It should have on file in the state office a copy of every contract made by the counties, and it should know the advantages and defects of the various contracts. It should be ready at all times to act as a consultant when new contracts are to be made."

Following Dr. Shaw's talk, Mr. Jack Austin of Wichita, Kansas, Executive Secretary of the Sedgewick County Medical Society, explained what Sedgewick County was doing. "Six years

ago Sedgewick County was organized for holding meetings only. Now we have a clinic for the care of the indigent, a Medical-Dental Collection Bureau, and a Medical Service Bureau for the low income group. The clinic is operated with a rotating staff, under the direction of the county medical society, to whom a fee is paid by the county supervisors. Seventy per cent of the physicians and dentists belong to the Medical-Dental Collection Bureau and find it satisfactory. The average cost of collections is 35 per cent, and the amount collected is higher than in ordinary agencies. The Medical Service Bureau determines the ability of the patient to pay, and scales his bills accordingly. It has eliminated the abuse of charity work, and has helped preserve the patient-physician relationship."

Dr. Olin West was called upon to start the discussion of the afternoon papers. Dr. West complimented both Dr. Shaw and Mr. Austin upon their presentation of the subject. "The office of the American Medical Association is continually being asked to provide a 'plan.' It is being told that it should do this and that. The officers are censured for not taking some sort of action, when as a matter of fact they are bound to carry out the wishes of the House of Delegates. Up until this time, the House of Delegates has not intimated that it wished us to provide a 'plan' for the entire country. I am glad to hear Dr. Shaw say that it seemed impossible to formulate a plan which would work even in so small a section as one state. I am glad to hear him mention the defects of the plan which was made, and I note it has been discontinued. Up until now, the American Medical Association has had no compilation of facts as to the availability of medical care to refute the claims made by outsiders against the medical profession. The survey now being started will remedy that situation. It will provide the central office with a list of plans being used, and will show the strength and weakness of those plans. Through such knowledge, a flexible plan may be evolved which can be adapted to local needs."

Dr. Morris Fishbein closed the conference with the following pertinent remarks, "This is the first time the American Medical Association as a national organization has attempted to stimulate the county medical societies to take action toward determining the need for and availability of medical care. The national office should make a record of what each county has done and disseminate the information. It should stimulate further action and organization. The county medical society is the basis upon which the national office is built, and

it is the unit which should be active. I can foresee that many county medical societies will be forced to raise their dues and become more active than they have been in the past."

MEDICAL EDUCATION AND LICENSURE CONGRESS

The annual conference on medical education and licensure, sponsored jointly by the Council on Medical Education and Hospitals and the Federation of State Medical Boards, was held in Chicago, February 14 and 15. This conference is unique since it brings together those who fix the standards of medical education with those who fix standards for licensure and those responsible for enforcement. The program is designed to meet such diverse interests that it is impossible to give a complete resumé of such a meeting in this column. We can, however, mention some of the high points of the meeting.

The chairman of the Council on Medical Education and Hospitals of the American Medical Association reviewed the work of that agency with particular emphasis on the survey of medical schools which was conducted by the Council in cooperation with the Federation of State Boards and the Association of American Medical Schools. This survey was conducted in the academic years of 1935-1936 and 1936-1937. Some twenty schools were warned of the necessity of providing better teaching facilities if their recognition was to be continued. This required increased budgets by many schools and decreased enrollment (because of inadequate facilities) by others. As a result these schools have increased their budgets on the average of more than \$43,000 per annum, a total of almost a million dollars. The total enrollment of freshman classes in the United States in 1938 is about 750 less than it was in 1934. The important fact is that this reduction has occurred where it was needed.

Much discussion was given to the function and performance of the special examining boards for certification of specialists. They are generally accepted as much needed and their work is being well received. Naturally the high standards which they have set are met with some criticism, but they weather it well.

Postgraduate education was given unusual consideration because of the demands of the special examining boards, and also because of the effort by many state societies to stimulate doctors in service to take short courses at home. The metropolitan schools with large resources tend to see only the two or three year courses for those who want to qualify as specialists. Other schools in

closer relation to the practitioner in less populated areas are more responsive to the needs of the general practitioner.

Problems of licensure are not peculiar to the medical profession. The conference was addressed by the president of the New York Board of Law Examiners, and it was apparent that the problems in evaluating character, personal and educational qualifications are common to all groups.

Interesting discussions revolved around the requirements of some states for hospital internship before registration for practice. Some states are quite rigid in specifying type of service, length of time in various services, size of hospitals, number of cases, etc. The consensus was that such requirements, if any, should be broad and permit discretion on the part of the registration or examining boards.

Foreign students educated in their native country, and American students educated abroad, have presented difficult problems to many boards in many areas. With the overcrowding of American schools and their high standards, many American students who have been refused admission to medical schools in this country have gone abroad hoping to return here to practice. Obviously no agency in this country can speak with authority regarding standards and courses in foreign medical schools. This has been especially difficult under the recent rapidly changing conditions in Europe. Therefore, there is a growing restriction on these applicants all along the line in this country. An interesting program relating to Italian universities has been evolved. Students wishing to go to Italy are referred by the Italian consul to New York University for educational certification. The rigidity of their requirements eliminates 75 to 80 per cent of the applicants.

Basic science laws were discussed, the prevailing feeling being that they constitute a real contribution to the standards of the healing arts in those states with multiple examining boards.

An interesting contribution to the conference was that of Walter M. Kotschnig, who participated in the Des Moines Forum for a period of three months. Professor Kotschnig is now teaching economics at Smith and Mount Holyoke Colleges. He addressed the conference on the subject of limiting student enrollment. His approach was from the economic point of view, and stressed the pitfalls of such attempts, rather than the answers as to how, why and when, it might be practical, if ever.

The proposition introduced in an address before the conference, in which the establishment of a National Council on Medical Education, Li-

censure and Hospitals was recommended, has already received editorial comment in the *Journal* of the American Medical Association (February 26, page 654).

IX. ANGINA PECTORIS*

"But there is a disorder (pain) which may be brought on not only by exertion, excitement, or meals, but also by swallowing, coughing, going to stool, or speaking."—Heberdin—1768.

The modern treatment of this "disorder" will be discussed in this article.

It is now fairly well established that angina pectoris is due to an interference with the flow of blood through the coronary arteries, and that it results in a curtailment of the blood supply to parts of the myocardium. When the metabolic rate of the heart is increased beyond a certain level, the affected portion of the cardiac muscle becomes anemic, and, in susceptible individuals, a paroxysm of substernal distress follows. Therefore, the logical way of preventing the pain is to attempt to restore the circulation or to reduce the heart load, or both. Today the blood supply is improved by the use of vasodilative drugs. Perhaps tomorrow surgical means for increasing the blood flow will also be used.

The drugs used for the relief of angina are the nitrites, theophylline and its compounds, and morphia. The nitrites cause a brief (one to thirty minutes) dilatation of the arterial twigs. Overdoses bring on unpleasant manifestations in the form of flushing of the face, dizziness and nausea. Properly used, these drugs may be taken indefinitely without producing any permanent harmful effects. The only form of nitrites needed to treat the angina of effort is nitroglycerin (glyceryl-trinitrate) in the form of fresh 0.3 milligram (1:200 grain) tablets. Some people are hypersensitive to the drug, and so the initial dose should be one-half of one tablet. Nitroglycerin is used to stop an attack or to prevent one. When suffering from an attack, the patient dissolves the tablet in the mouth before swallowing it, repeating the dose until the paroxysm is over or until toxic symptoms appear. The patient is told to carry tablets about his person and to use them during an attack, or when undertaking an effort which may bring on distress. Once he has done this, he will probably carry the medicine with him the rest of his life. Some clinicians prescribe nitroglycerin three times a day for the purpose of preventing the angina. It is difficult to see any logic in such a practice, since the drug's

* Editor's Note. This is the ninth article in this series of editorials prepared by Dr. Daniel J. Glomset on modern cardiac therapy. Earlier issues of the *JOURNAL* carried the previous eight parts.

action lasts only long enough to give the heart a chance to rid itself of its dolorous load.

Theophylline and its compounds are now being used extensively here and abroad for the prevention of anginal attacks. The popularity of the drugs, in this section, is due largely to the fact that Smith¹ and his pupils have shown in work on experimental animals that amidophylline is a powerful dilator of the coronary arteries. They have also reported happy results from using it in the treatment of angina pectoris. They use amidophylline (theophylline ethylenediamine) in 90 milligram ($1\frac{1}{2}$ grain) doses after meals three or four times a day, and over a long period of time. The effect of the drug is much more lasting than that of the nitrites. The Iowa investigators are very enthusiastic over the benefit derived from it. Riseman and Brown², appear to have added new evidence in support of their claims. Evans³, however, failed to procure any striking benefit from using euphylline in cases of angina pectoris. He employed it in a large group of well controlled cases in London hospitals. Most American clinicians who have expressed themselves publicly about these drugs are guarded in their statements as to the real benefit to be gained from their use. Personally, I have tried to obtain worthwhile records from my physician patients and other intelligent sufferers. I have instructed them to take amidophylline prior to undertaking tasks that usually provoke their paroxysms, and report the results to me. The statements thus secured are not convincing. The drug has the drawbacks of being expensive, and of upsetting the stomach when taken over long periods, but obviously it and its fellows should be given a trial in stubborn cases of angina pectoris.

The physician who undertakes to treat diseases of the heart will sooner or later (usually too soon) encounter cases which will not respond to either of the drugs discussed. In such cases morphine and its derivatives must be used to relieve the patient. Certain cases in the status anginosus may be controlled by the administrations of codeine sulphate by mouth (30 to 60 milligrams three times daily) for a few days. Other patients may obtain relief only by doses of morphia given hypodermically. Large doses are sometimes necessary. At times the physician may believe he is dealing with a case of coronary occlusion only to find his patient at work the next day not much the worse for his struggle.

In the treatment of angina pectoris, drugs are seldom the only method employed, nor are they the main therapeutic weapons. The physician's principal task is to maintain the patient's metab-

olism within the painless zone. In this the victim will nearly always cooperate to the utmost, since he usually knows the evil effect of excessive physical labor before he seeks help. He knows what type of effort brings on an attack, and how to avoid it. Very few patients, however, realize that excessive weight is a constant and harmful load on a crippled heart. The overweight patient must be put on an appropriate diet and kept on it until he is normal weight or below. Again, only a few patients realize that large meals may induce an attack. They should be made to realize the value of many small, easily digested meals. The effect of mental disturbance, business worry and stress, lack of sleep, and excitement of any kind should be recognized and handled by patient and doctor alike, just as if they were physical labors. The effect of cold winds, straining at stool, and intercourse, should be translated into the same terms. All such efforts increase the labor of the heart, and since stress of any kind must be avoided, patient and doctor must cooperate to eliminate them.

The decubitus form of angina apparently is caused by a number of factors, such as bad dreams, attempts at intercourse, worry, and perhaps also by too low blood pressure. The physician must find the real cause and remove it by appropriate means. The intractable cases of angina pectoris which do not yield to medical management are few and far between. The surgical treatment has been discussed in a previous section of this series.

More or less severe cardiac neurosis is frequently associated with angina pectoris, not only because of the nature of the paroxysmal cardiac pain, but, also because of its close association with the cardiac patient's most dreaded menace; namely, myocardial infarction. Proper treatment of the neurosis not only may cause the paroxysms to disappear, but may also be the therapeutic agent which really restores the patient to economic usefulness and happiness.

In conclusion, let me say that the proper use of spiritous liquors is as efficacious in cases of angina pectoris now as it was in the days of Heberdin. The recommendation that a cardiac patient take a Scotch and soda for his heart's sake when he is "down", is as sagacious advice as was St. Paul's admonition to his beloved Timothy.

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3. Evans, W., and Hoyle, C.: The comparative value of drugs used in the continuous treatment of angina pectoris. *Quart. Jour. Med.*, ii:311-338 (July) 1933.

THE VALUE OF YOUR STATE JOURNAL

There are many problems confronting the medical profession today, most of them of a highly controversial nature, especially those concerning the economic side of the practice of medicine. It will be a relief, therefore, to direct your attention to a problem, equally important, but comparatively easy to solve.

Briefly, the question is, how valuable to you is your state medical JOURNAL? Do you read the contents each month, and especially do you notice the advertising pages? Advertisers in a publication of this character hold a unique position in the advertising world. Presumably their message to you, carried each month in the pages of your official organ, is for the purpose of acquainting you with the proper use of their products. How can they feel that this purpose has been accomplished if we as readers take no notice of their carefully prepared copy? The answer is that they cannot, and following closely upon this fact is the realization that they will not long continue along this line of endeavor. There is a growing tendency on the part of these commercial companies to confine their advertising activities to free samples and the direct mail approach. The effect of this ever increasing trend away from state medical journal advertising is painfully evident.

The solution of this problem is in the hands of each individual member of the Iowa State Medical Society. Some indication of active co-operation on the part of our members is an absolute necessity if we are to convince these manufacturing firms that their change of policy is ill-timed and unwise. We earnestly solicit your attention to these facts. Much headway can be made if each member will take it upon himself to make intelligent inquiries of detail men who call upon him, to support those firms now advertising, and above all, to read the advertising pages of the JOURNAL each month, so that he can be fully acquainted with the progress and ethical standing of the various products which are acceptable for advertising to reputable physicians.

ADMINISTRATION OF THE IOWA USE TAX LAW

Because so many inquiries have been received in the central office in regard to the Iowa Use Tax, it was considered advisable to obtain an explanation of the policy of the Iowa State Board of Assessment and Review in the administration of this law. The following paragraphs are quoted from a letter written by the chairman of this board.

"The Iowa Personal Property Use Tax Law was enacted by the last session of the Legislature for the sole purpose of equalizing the application of the retail sales tax and of placing Iowa sellers on an equal basis with out-of-state sellers insofar as tax is concerned. It is our aim in the administration of the use tax law to accomplish the intent of the legislature in this regard and if there has been what appears to be discrimination between various types of businesses and professions in our enforcement activities to date, we wish to explain that it is due only to our inability because of limited personnel to start collection activities in all lines of business at the same time.

"It should be understood that liability for tax under any tax law does not necessarily start with written notification from this office, but that tax liability is placed by the law itself and commences with the effective date of the law, which in this case was April 16, 1937. Because the use tax law was written very generally to apply to all types of business, it has been difficult for many who do not make a study of the various tax laws to understand the application of the use tax to their business or profession. We have, therefore, adopted to a limited extent the policy of sending out a form letter of instructions and explanation to each type of profession or lines of business where a complete mailing list of all members was obtainable in order to acquaint them with their tax liability, as we did to the members of the medical profession. We have necessarily had to space out such mailings, however, for a large volume of correspondence usually results and we delay collection activities in other fields sufficiently to permit the handling of that correspondence with reasonable promptness. You and the members of your society may be assured, however, that when we have completed our program for the administration of this new tax law any feeling of discrimination which you may have at the present time will be entirely removed, for our board will administer the law fairly and impartially.

"We sincerely hope that within the near future we shall have registered all of the major out-of-state medical supply and equipment firms who make sales to Iowa doctors, so that members of your society will be relieved of the necessity of filing quarterly tax returns. Within the past month seven or eight supply houses have registered with this department for the collection of the Iowa use tax at the time of sale and this fact is causing many other supply houses to start action toward a similar registration so that they may render the same service to their Iowa cus-

tomers. We would be glad to furnish you with a list of the firms who have registered to date, if it were not for the fact that by the time this list reached your members it would be obsolete, for new firms are registering daily. It would be obviously unfair to many firms who are now taking action toward complying with the Iowa use tax law if their names were omitted from such a list merely because their certificate of registration had not been actually issued on the day the list was furnished. There should be no doubt in the minds of your members, however, as to the firms who are collecting the tax, for the tax is required to be set out as a separate item on the invoice. In cases where the tax is added on the invoice, if there is any doubt in the minds of your members as to the authority of the retailer for the collection of the use tax, we shall be very glad to advise regarding such authority upon receipt of an inquiry from them.

"With reference to your request for a list of states which do or do not impose a sales tax, we wish to advise that we would be glad to furnish such a list if it were not for the fact that it might be misleading to your members. In order for a tax imposed by a foreign state to be allowed as a credit against the Iowa use tax due, this tax must actually be paid by the Iowa purchaser. If such a tax is being paid it would be clearly set out on the invoice of the seller so that there would be no doubt as to the kind or rate of tax being paid. The mere fact that a foreign state has a sales tax law in effect does not necessarily mean that the tax is being paid by the Iowa purchaser from a firm located in that state. In our opinion the only instance where an Iowa resident might legally be required to pay a tax imposed by a foreign state is where the Iowa resident is in the foreign state at the time of purchase and takes delivery of the merchandise there. If the merchandise is shipped to the customer in Iowa in interstate commerce, as we believe is usually the case with members of your society, no foreign state could legally impose their sales or use tax thereon."

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Council

The Council of the Iowa State Medical Society met Sunday, February 27, at 1:00 p. m. at the Hotel Fort Des Moines. In attendance were the eleven councilors, the three members of the Committee on Constitution and By-Laws, E. M. Myers, President, and Robert L. Parker, Secretary.

Transactions: 1. Minutes of the meeting of October 27, 1937, were read and approved. 2. Approved

the appointment of a committee to study the Speakers Bureau and bring a report and recommendations concerning it to the May meeting of the Council. 3. Approved the minutes of the February 11, 1938, meeting of the Executive Committee of the Cancer Committee. 4. Discussed changes in the Constitution and By-Laws and recommended (a) that an Executive Council be created to carry on the work of the House of Delegates between annual sessions; (b) that the state be divided geographically and a trustee be elected from each district; and (c) that arrangements be made for a Speaker of the House. 5. Disapproved of additional seal sales or appeals for funds in the state, particularly in reference to crippled children, because they receive funds from many sources now. 6. Discussed Women's Field Army organization work.

Meeting adjourned at 4:00 p. m.

Meeting of the Committee on Constitution and By-Laws

The Committee on Constitution and By-Laws met with the Council of the Iowa State Medical Society Sunday, February 27, and considered recommendations from the Council in regard to amendments to be submitted to the House of Delegates at the 1938 annual session. Following the Council meeting, the committee met with the secretary, Robert L. Parker, and formulated three suggested amendments to the Constitution and By-Laws.

Meeting adjourned at 4:30 p. m.

ART EXHIBITION

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a first national exhibition in the San Francisco Museum of Art, San Francisco, California, in June, 1938, during the annual session of the American Medical Association. The exhibition promises to be of unusual interest with entries to be accepted (after jury selection) in the following classifications; oils, water colors, sculpture, photography, pastels, etchings, crayon and pen and ink drawings (including cartoons), wood carvings and book bindings. Scientific medical art work will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Building, San Francisco, California.

MAYO FOUNDATION LECTURES

A special program of lectures and demonstrations in surgery and medicine will be held under the direction of The Mayo Foundation from March 28 to April 1, inclusive. Symposiums on gastric diseases, diseases of children, cardiology, urology and backache, and conferences on roentgen, radium and physical therapy will be included. Visiting physicians are invited to attend.

SPEAKERS BUREAU ACTIVITIES

"REFRESHER" COURSES

The final schedules for the four "refresher" courses in obstetrics and pediatrics being presented this spring are given below. Letters and programs giving the hours, dates and locations of these meetings have been sent to all physicians in the territory surrounding the four centers.

The fee for the courses will be \$2.00, payable at the opening meeting. For further information regarding the courses, please write Dr. C. E. Harris of Grinnell, Dr. J. G. Macrae of Creston, Dr. R. D. Bernard of Clarion, and Dr. H. E. Farnsworth of Storm Lake.

Mondays, Grinnell, Hotel Monroe

- Mar. 7 The Therapeutic Use of Endocrine Products in Obstetrics and Gynecology. Sterility. C. W. Seibert, M.D., Waterloo.
 - Mar. 14 Abortion; Cause and Treatment. Ante and Postpartum Hemorrhage. J. D. Randall, M.D., Iowa City.
 - Mar. 21 Puerperal Infection; Prevention and Treatment. Vaginal Infections; Diagnosis and Treatment. E. D. Plass, M.D., Iowa City.
 - Mar. 28 Syphilis in Obstetrics and Gynecology. Immediate Care of the Newborn. W. F. Mengert, M.D., Iowa City.
 - Apr. 4 Nutrition in Infants and Children. P. C. Jeans, M.D., Iowa City.
 - Apr. 11 Recent Advances in Serum Therapy in Some Communicable Diseases. Lee F. Hill, M.D., Des Moines.
 - Apr. 18 Convulsions in Infancy and Childhood. Preston Gibson, M.D., Davenport.
 - Apr. 25 Otitis Media and Its Complications in Infancy. J. A. Downing, M.D., Des Moines.
- 5:00—6:00 p.m. Lecture
6:00—7:00 p.m. Dinner
7:00—8:00 p.m. Lecture

Tuesdays, Creston, Greater Community Hospital

- Mar. 8 The Therapeutic Use of Endocrine Products in Obstetrics and Gynecology. Sterility. R. M. Collins, M.D., Council Bluffs.
 - Mar. 15 Abortion; Cause and Treatment. Ante and Postpartum Hemorrhage. J. D. Randall, M.D., Iowa City.
 - Mar. 22 Puerperal Infection; Prevention and Treatment. Vaginal Infections; Diagnosis and Treatment. E. D. Plass, M.D., Iowa City.
 - Mar. 29 Syphilis in Obstetrics and Gynecology. Immediate Care of the Newborn. W. F. Mengert, M.D., Iowa City.
 - Apr. 5 Nutrition in Infants and Children. P. C. Jeans, M.D., Iowa City.
 - Apr. 12 Recent Advances in Serum Therapy in Some Communicable Diseases. Lee F. Hill, M.D., Des Moines.
 - Apr. 19 Convulsions in Infancy and Childhood. Preston Gibson, M.D., Davenport.
 - Apr. 26 Otitis Media and Its Complications in Infancy. J. A. Downing, M.D., Des Moines.
- 5:00—6:00 p.m. Lecture
6:00—7:00 p.m. Dinner
7:00—8:00 p.m. Lecture

Wednesdays, Clarion, Hotel Moore

- Mar. 9 The Therapeutic Use of Endocrine Products in Obstetrics and Gynecology. Sterility. C. W. Seibert, M.D., Waterloo.
 - Mar. 16 Abortion; Cause and Treatment. Ante and Postpartum Hemorrhage. J. D. Randall, M.D., Iowa City.
 - Mar. 23 Puerperal Infection; Prevention and Treatment. Vaginal Infections; Diagnosis and Treatment. E. D. Plass, M.D., Iowa City.
 - Mar. 30 Syphilis in Obstetrics and Gynecology. Immediate Care of the Newborn. W. F. Mengert, M.D., Iowa City.
 - Apr. 6 Nutrition in Infants and Children. P. C. Jeans, M.D., Iowa City.
 - Apr. 13 Recent Advances in Serum Therapy in Some Communicable Diseases. Dennis Kelly, M.D., Des Moines.
 - Apr. 20 Convulsions in Infancy and Childhood. P. D. Knott, M.D., Sioux City.
 - Apr. 27 Otitis Media and Its Complications in Infancy. J. V. Treynor, M.D., Council Bluffs.
- 6:30—7:30 p.m. Dinner
7:30—9:30 p.m. Lecture

Thursdays, Storm Lake, High School Building

- Mar. 10 The Therapeutic Use of Endocrine Products in Obstetrics and Gynecology. Sterility. R. M. Collins, M.D., Council Bluffs.
 - Mar. 17 Abortion; Cause and Treatment. Ante and Postpartum Hemorrhage. J. D. Randall, M.D., Iowa City.
 - Mar. 24 Puerperal Infection; Prevention and Treatment. Vaginal Infections; Diagnosis and Treatment. E. D. Plass, M.D., Iowa City.
 - Mar. 31 Syphilis in Obstetrics and Gynecology. Immediate Care of the Newborn. W. F. Mengert, M.D., Iowa City.
 - Apr. 7 Nutrition in Infants and Children. P. C. Jeans, M.D., Iowa City.
 - Apr. 14 Recent Advances in Serum Therapy in Some Communicable Diseases. Dennis Kelly, M.D., Des Moines.
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 - Apr. 28 Otitis Media and Its Complications in Infancy. J. V. Treynor, M.D., Council Bluffs.
- 6:00—7:00 p.m. Lecture
7:00—8:00 p.m. Dinner
8:00—9:00 p.m. Lecture

RADIO SCHEDULE

WOI and WSUI—Wednesdays at 4:00 p.m.

- March 2—Obesity, A. A. Schultz, M.D.
- March 9—Hobbies and Health, State Medical Society of Wisconsin.
- March 16—Rickets, George C. Murphy, M.D.
- March 23—Cancer.
- March 30—To be announced.
- April 6—Diet in Health, Walter Cary, M.D.

WOMAN'S AUXILIARY NEWS

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Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

HYGEIA, THE HEALTH MAGAZINE

As your State Hygeia chairman, I wish to impress upon you the importance of having a copy of *Hygeia* on each doctor's reception room table. It interprets scientific medicine for the layman; it exposes quackery; it discourages self-medication; it urges early medical advice; and above all, it promotes a better understanding between physician and patient.

As auxiliary members, we are all interested in the problem of educating the laity to a finer appreciation of medical ethics and practice. One could do no better than to recommend the reading of this fine magazine to accomplish this purpose. The following are a few of the subjects to be discussed in future issues of *Hygeia*: x-ray in the treatment of cancer; why do teeth decay?; what light for the eyes?; ideas and ideals in tuberculosis; the choice of a marriage mate; nursing in the home; heart murmurs in children; better health through photography; malaria still kills; can diet cause or prevent cancer?; don't let your child get fat; this confusing business, adolescence; speeding up your reading; the health chaser; marijuana smoking; and digestion and indigestion.

Much more could be said in praise of this splendid publication, but we feel that each auxiliary member is already acquainted with the outstanding features which make this magazine so valuable in the all important field of lay education. It only remains for all of us to make every effort to disseminate this information to the members of our various social and club groups, to the end that the citizens of this country may really become Hygeia-minded.

Mrs. Tom B. Throckmorton,
State Hygeia Chairman

HEALTH RADIO PROGRAMS

As previously announced, the American Medical Association and the National Broadcasting Company present each week over the Red Network a program of dramatized health messages intended to furnish supplementary material for health teaching in junior and senior high schools. The program is broadcast each Wednesday from 1:00 to 1:30 p. m., central

standard time. Weekly topics for March and April are as follows:

March 16—Keeping Books on Health; the importance of vital statistics and health records.

March 23—Catching Disease from Animals; rabbit fever, rabies, undulant fever, etc.

March 30—A Fool for a Day; fallacies and popular beliefs that are not true.

April 6—Living with People; elements of mental hygiene.

Announcements of these broadcasts will be published on this page from time to time, and it is sincerely to be hoped that auxiliary members will use their influence in obtaining these programs on local radio stations in their communities.

POLK COUNTY AUXILIARY

The Auxiliary to the Polk County Medical Society met at the Commodore Hotel on Monday, January 31, with more than fifty members and guests in attendance. After a one o'clock luncheon the annual business meeting was held with the following results: Mrs. A. E. Merkel, president; Mrs. E. J. Harnagel, vice president; Mrs. Harry W. Dahl, secretary; and Mrs. Henry G. Decker, treasurer. The membership report showed ninety-six active and seven associate members. A proposed amendment to raise the dues was lost by ballot, and dues will remain at one dollar a year. A welcome was extended to new members and guests, among whom were several brides and the wives of members of the medical staff of the Veterans Administration, and of the State and County Boards of Health. Mrs. S. E. Lincoln, president of the Auxiliary to the Iowa State Medical Society, was presented and spoke briefly of the work and relationship of several women's organizations. A gavel, made from walnut grown on the Woods' farm and cut in 1884, was presented to the auxiliary by Mrs. H. B. Woods, and accepted by the incoming president, Mrs. Merkel. Bridge games, contract and auction, in charge of Mrs. H. C. Willett and her guest, Mrs. John Marion, concluded the afternoon program.

Mrs. H. B. Woods

SOCIETY PROCEEDINGS

Black Hawk County

Frank R. Peterson, M.D., of the State University of Iowa, College of Medicine, presented an illustrated lecture on Cancer of the Colon and Rectum, at a meeting of the Black Hawk County Medical Society, held in Waterloo, Tuesday, February 15.

Calhoun County

Guest speaker for the Calhoun County Medical Society when that organization met in Rockwell City, Tuesday, February 15, was H. Winnett Orr, M.D., orthopedic surgeon of Lincoln, Nebraska. Dr. Orr spoke on the general subject of fractures.

Cherokee County Annual Meeting

Officers elected at the annual meeting of the Cherokee County Medical Society, held Monday, February 14, are: Dr. R. P. Noble of Cherokee, president; Dr. C. H. Swift, Jr., of Marcus, vice president; Dr. J. M. Pope of Cherokee, secretary and treasurer; Dr. Charles F. Obermann of Cherokee, delegate; and Dr. Lester J. Spinharney of Cherokee, alternate delegate. The scientific portion of the program was furnished by L. H. Peek, M.D., who read a paper on Inebriety, which was discussed by Dr. Obermann.

J. M. Pope, M.D., Secretary

Crawford County

The second meeting of the Crawford County Medical Society was held at the Hotel Denison in Denison, Tuesday, February 15. The address of the evening was given by J. Harry Murphy, M.D., professor of pediatrics, Creighton University School of Medicine, who spoke on Tuberculosis in Children. His talk was particularly interesting because of the fact that it dealt with 10,000 cases of tuberculosis in the middle west, and because of the pertinent facts which it presented in regard to the incidence of tuberculosis in the middle west as compared with the eastern part of the country where population centers are greater. Dr. Murphy's statistics showed that only 35 per cent of young adults had the primary infection, whereas in congested areas this percentage is well up in the nineties. The address was augmented by lantern slides and an excellent moving picture film which the author produced from his material.

J. James Duffy, M.D., Secretary

Dubuque County Annual Meeting

The annual meeting of the Dubuque County Medical Society was held Tuesday, February 8, in Dubuque, with the following results: Dr. A. M. Loes, president;

Dr. H. G. Langworthy, first vice president; Dr. William Langford of Epworth, second vice president; Dr. L. E. Cooley, secretary; Dr. F. W. Meyers, treasurer; Dr. C. C. Lytle, delegate; and Dr. L. H. Fritz, alternate delegate. Olan R. Hyndman, M.D., of Iowa City, gave a most interesting talk on The Rôle of the Physician in General Practice to Neurosurgery.

L. E. Cooley, M.D., Secretary

Fayette County

The Fayette County Medical Society held its second meeting of the year at the Court House in West Union, Wednesday, February 16, with seventeen members present. Plans were proposed for dividing the society into groups of the various branches of medicine for purposes of discussion and individual consultation. A four county meeting was planned, including Allamakee, Clayton, Fayette and Winneshie counties, to meet in April in Postville. Summer meetings were discussed with the idea of the members taking a day off and meeting at the golf club house in both Oelwein and West Union, alternately. A film on Traumatic Surgery of the Extremities was the scientific feature of the evening.

H. H. Wolf, M.D., Secretary

Jasper County

Fred Moore, M.D., of Des Moines, spoke before the Jasper County Medical Society, Tuesday, February 1, at the meeting held at the Skiff Memorial Hospital in Newton. Dr. Moore addressed the group on Pneumonia in the Child.

Johnson County

A symposium on fractures, conducted by Arthur Steindler, M.D., head of the orthopedic department of the Children's Hospital in Iowa City, and J. H. Wolfe, M.D., also of the department, constituted the scientific program for the Johnson County Medical Society, at the meeting held Wednesday, February 2.

W. M. Fowler, M.D., Secretary

Linn County

Thursday, March 3, the Linn County Medical Society entertained as guest speakers N. G. Alcock, M.D., of Iowa City; Paul F. Stookey, M.D., of Kansas City, Missouri; and James H. Allen, M.D., of Iowa City. Dr. Alcock spoke on Malignancy of the Kidney; his paper was discussed by Clifford Losh, M.D., of Des Moines, and Jennings Crawford, M.D., of Cedar Rapids. Dr. Stookey addressed the society on Staphylococcus Septicemia, and O. R. Hyndman, M.D., of

Iowa City, and Ernest G. Kieck, M.D., of Cedar Rapids, opened the discussion. The subject of Dr. Allen's paper was *Staphylococcus Conjunctivitis*.

The next meeting of the society will be held Thursday, March 31, at which time A. Graeme Mitchell, M.D., of Cincinnati, will speak on *What I Do Not Know About Endocrines*.

T. F. Hersch, M.D., Chairman Program Committee

Montgomery County

The regular meeting of the Montgomery County Medical Society was held at Red Oak, Thursday, February 10. After a six-thirty dinner, the following program was presented: *Dysmenorrhea and Its Treatment*, Robert M. Collins, M.D., of Council Bluffs; and *Coronary Heart Disease*, Guy R. McCutchan, M.D., also of Council Bluffs. A general discussion was then held of the preventive treatment of contagious diseases, with especial attention to smallpox and scarlet fever.

Oscar Alden, M.D., Secretary

Scott County

The regular monthly meeting of the Scott County Medical Society was held Tuesday, February 1, at the Lend-A-Hand Club in Davenport. Guest speaker for the occasion was Charles B. Puestow, M.D., of Chicago, assistant professor of surgery at the University of Illinois College of Medicine. Dr. Puestow spoke on *Surgery of the Gallbladder and Bile Ducts*.

H. A. Meyers, M.D., Secretary

Wayne County Annual Meeting

Officers elected at the annual meeting of the Wayne County Medical Society held in Corydon, Thursday, February 3, are: Dr. D. R. Ingraham of Sewal, president; Dr. G. H. Sollenbarger of Corydon, secretary and treasurer; Dr. B. S. Walker of Corydon, delegate; and Dr. A. E. Davis of Seymour, alternate delegate.

Woodbury County

The February meeting of the Woodbury County Medical Society was held in Sioux City, at the West Hotel, Thursday, February 17, with A. M. Snell, M.D., assistant professor of medicine at the University of Minnesota Medical School, as guest speaker. Dr. Snell spoke on *Recent Studies on Diseases of the Liver and Bile Ducts*. Another feature of the evening program was a paper on *Barbituric Acid Derivatives with Special Reference to Toxicity and Addiction*, read by R. J. Duling, M.D., of Sioux City.

W. H. Gibbon, M.D., Secretary

Upper Des Moines Medical Society

The winter meeting of the Upper Des Moines Medical Society was held at the Tangney Hotel in Spen-

cer, Thursday, February 24. After a six o'clock dinner and entertainment, the following two scientific papers were presented: *Cervical Rib*, Frank D. Edington, M.D., of Spencer; and *Diabetic Acidosis*, F. LeRoy Roberts, M.D., of Spirit Lake. Officers of the organization are Dr. George H. Keeney of Mallard, president; and Dr. Don Rodawig of Spirit Lake, secretary.

PERSONAL MENTION

Dr. Marvin J. Blaess of Marshalltown was recently appointed attending ophthalmic surgeon to the staff of the newly enlarged Evangelical Deaconess Hospital in Detroit, Michigan. He will take up his residence there on March 15.

Dr. F. P. Winkler of Sibley, was the speaker of the evening for a program in Spencer, Wednesday, February 2, presented under the auspices of the Spencer Junior Chamber of Commerce and the Clay County Medical Society. An audience of more than 500 heard the lecture on "*Venereal Disease Control*", and viewed sound motion pictures, shown by Dr. R. M. Sorensen of LeMars.

Dr. James W. Martin, formerly of Omaha, Nebraska, has arrived in Holstein to take charge of the medical practice of Dr. C. G. Bretthauer, who is retiring from practice in Holstein, and moving to California.

Dr. M. M. Benfer of Davenport spoke on "*The Control of the Venereal Diseases*", at a public meeting, held at the Y. W. C. A. in Muscatine, Monday, February 21. The program was sponsored by the Woman's Auxiliary to the Muscatine County Medical Society.

Dr. M. B. Cunningham, formerly of Stratford, has located in Norwalk, where he will take over the practice of the late Dr. C. A. Willett.

Dr. O. W. King of Des Moines, addressed a public forum meeting in Jefferson, Wednesday, February 2, on "*The Social Diseases*." The Jefferson Junior Chamber of Commerce sponsored the program.

MARRIAGES

The marriage of Miss Katherine Block, daughter of Mrs. Nelle Block of Sioux City, and Dr. Paul L. Wolpert of Onawa, took place Thursday, February 10, in Onawa. After a short wedding trip through the southern states the couple returned to Onawa, where Dr. Wolpert has been associated in the practice of medicine with Dr. L. A. Gaukel for the past few months.

Miss Arlene Breese, daughter of Mr. and Mrs. R. R. Breese of Traer, and Dr. H. E. Holtz of Iowa City, were married Saturday, February 12, at the home of the bride's parents in Traer. Dr. and Mrs. Holtz are at home in Iowa City, where Dr. Holtz has been resident physician in the department of radiology at the State University of Iowa, College of Medicine, for the past three years.

DEATH NOTICES

Bradley, William Edwin, of Estherville, aged seventy-two, died February 12, after an illness of several months. He was graduated in 1892 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Emmet County Medical Society.

Mathes, Dwight Addison, of Jefferson, aged thirty-five, died suddenly February 10, after a heart attack. He was graduated in 1931 from the University of Kansas School of Medicine, and at the time of his death was a member of the Greene County Medical Society.

Oliver, Arthur James, of Muscatine, aged sixty-seven, died February 19, of coronary thrombosis. He was graduated in 1896 from Rush Medical College, University of Chicago, and at the time of his death was a life member of the Muscatine County and Iowa State Medical Societies.

COMING MEETINGS

Because we feel that some of the physicians in Iowa may be interested in a number of national meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Annual Medico-Military Symposium, sponsored by the Kansas City Southwest Clinical Society in conjunction with the Seventh Corps Area, military surgeons, March 28 and 29, at the Kansas City General Hospital, Kansas City, Missouri.

Third Annual Postgraduate Institute, conducted by the Philadelphia County Medical Society, from March 28 to April 1, Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. Subject, "Diseases of the Digestive Tract."

First annual meeting, Iowa Pediatric Club, April 8, Hotel Fort Des Moines, Des Moines, Iowa.

Fourth Annual Postgraduate Course on Neuropsychiatry in General Practice, April 25 to 30, The Menninger Clinic, Topeka, Kansas.

American Board of Obstetrics and Gynecology will conduct next examination on Monday and Tuesday, June 13 and 14, immediately prior to meeting of American Medical Association. All applications must be filed in the office of the secretary of the organization before April 1, 1938.

American Board of Ophthalmology announces the

following examinations during 1938: San Francisco, June 13, Washington, D. C., October 8, and Oklahoma City, November 15. Applications must be filed with the secretary of the organization sixty days prior to the date of examination.

American College of Physicians, Twenty-second Annual Session, April 4 to 8, 1938, New York City.

Association on Mental Deficiency, April 20 to 23, 1938, Richmond, Virginia. E. Arthur Whitney, Elwyn, Pennsylvania, Secretary.

Society for Clinical Investigation, May 2, 1938, Atlantic City, New Jersey. J. M. Harman, Jr., Cleveland, Ohio, Secretary.

Iowa State Medical Society, Eighty-seventh Annual Session, May 11, 12 and 13, 1938, Des Moines, Iowa.

American Medical Association, Annual Session, June 13 to 17, 1938, San Francisco, California.

American Association of Industrial Physicians and Surgeons, jointly with the Midwest Conference on Occupational Diseases, June 6-9, 1938, at the Palmer House, Chicago, Illinois.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28-30, 1938, at the Hannibal-LaGrange College, Hannibal, Missouri.

Sixty-seventh Annual Meeting, American Public Health Association, October 25-28, 1938, Kansas City, Missouri.

VACANCIES IN THE SEVENTH CORPS AREA

There are a few vacancies at present and in prospect for duty with the CCC in this military district; i.e., Seventh Corps Area. This medical service is rendered by Reserve Officers or by civilian physicians, who enter into contract with the Surgeon, Seventh Corps Area. Anyone interested should address the Surgeon, Seventh Corps Area, Federal Building, Omaha, Nebraska.

SPRING MEDICO-MILITARY SYMPOSIUM

The annual Medico-Military Symposium, sponsored by the Kansas City Southwest Clinical Society in conjunction with the Seventh Corps Area, military surgeons, will be held at the Kansas City General Hospital, Kansas City, Missouri, March 28 and 29, 1938. This is a meeting devoted to medical subjects of military interest to which the entire medical profession is invited. Military surgery is industrial surgery, traumatic surgery is general surgery and military medicine is general medicine, and the sponsors of the meeting feel that every physician will find something of interest on the program. The Reserve Officer will gather information which will be of value in event of war, a not impossible eventuality; much that will be of value in his practice; and in addition he will receive credits which will apply on his advancement. The Kansas City Southwest Clinical Society invites every doctor of the southwest to reserve March 28 and 29 and plan to attend this meeting.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk
DR. JOHN T. MCCLINTOCK, Iowa City
DR. R. T. LENEGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines
DR. WALTER L. BIERRING, Des Moines
DR. WILLIAM JEPSON, Sioux City

A Prairie Doctor of the Eighties

The late Dr. Francis A. Long of Madison, Nebraska, was able just before his death on November 24, 1937, to complete an interesting autobiography under the title, "A Prairie Doctor of the Eighties."* In this volume of 225 pages are contained "some personal recollections and some early medical and social history of a prairie state," with two chapters on "The Prairie Doctor's Wife," by Maggie E. Long, who died about six months before her husband.

While the life story of Dr. Long is mainly concerned with the experiences of the pioneer doctor in a neighboring state, a part of his boyhood was spent in Iowa, and he received his medical training at the University of Iowa Medical Department in Iowa City. He later practiced for a short period at Moulton, Iowa, before locating at Madison, Nebraska, in the early eighties. He read medicine first in the office of a preceptor at Moulton, and later while teaching school in Burt county, Nebraska, had access to a good medical library before entering the regular Medical Department of the Iowa State University in the fall of 1880.

The description of his student life in Iowa City is interesting reading. "One hundred and fifty students registered in the fall of 1880 for work in the medical school. Only three of the students had bachelor degrees. A number had been teachers, several had some knowledge of pharmacy, while others came direct from the farm, and one was a cowboy fresh from the western range. Three members of this entering class, Guthrie, Littig and Chase, later became teachers in the University of Iowa Medical School. Another student, Ruth, became a teacher of anatomy and surgery in a rival medical college. At that time the Medical Department was housed in the south

half of what was then called South Hall. The first floor was the lecture room, and the basement was used for dissection. The entrance corridor housed the nucleus of a museum, both botanical and pathologic. This antedated the first medical building erected in the summer of 1882 which was destroyed by fire in 1901."

"Most of the classwork was given by lectures, which held the attention of the entire class of one hundred and fifty students. Except for the simple tests in urinalysis, almost no practical laboratory work was offered. It was required to dissect one part of the human body, but as material was scarce, seven students were assigned to one cadaver. The Mercy Hospital which had about thirty-five beds offered an abundance of material for the surgical clinic which was given every Thursday." The author notes, "while Listerism was much discussed, there was still considerable skepticism about antiseptic and aseptic methods. Up to the spring of 1882, Dr. W. F. Peck, our professor of surgery, had not accepted it. At that time 'laudable pus' was still taught, although Dr. Peck practiced and taught cleanliness in his surgical work. As further evidence that there was divided opinion on the subject of Listerism as late as 1882, I quote the following from the address for the faculty given at the commencement exercises on March 1, 1882, by Dr. H. B. Ransom.

"The three healing graces, physiological rest, support and cleanliness have been exalted and will remain upon their thrones, whether Listerism is true or not, whether there are pathogenic bacteria or not."

"Clinical material for the study of eye, ear, nose and throat was abundant and used to good advantage. As I look back on it, I think the clinics in internal medicine were good, too. The gynecological clinic had but one patient during

*Published by the Huse Publishing Company, Norfolk, Nebraska, 1937.

the two years I was in school. Her case was diagnosed as uterine hyperplasia, and was treated with local applications of carbolic acid, tincture of iodine and glycerine, equal parts. Obstetrics was taught by the aid of a manikin, and the principles were well drilled into the students. No obstetric cases were seen by the students while in school.

"Training in materia medica and prescription writing was excellent. We had excellent instruction in the art of bandaging. Chloroform and ether masks were home-made affairs during my student days. Our anesthetist, Dr. Moon, made them by rolling newspapers into a cone shape, and covering them both inside and outside with a towel.

"I had intended to take three terms at medical school before coming up for graduation. Most of my classmates, however, planned to come up for graduation at the end of the second year and they persuaded me to join them.

"And so I was graduated with forty-five of my classmates, on March 1, 1882, two weeks after my twenty-third birthday. I had exactly forty weeks of work in the Medical College, a fact which I recalled with amusement when I returned to Iowa City for the fortieth class reunion. At that time with several classmates, I was passing down the receiving line at the president's reception. When we reached President Jessup I remarked that we belonged to a period when it took only forty weeks to make a doctor. The President rose to the occasion gallantly remarking, 'And they made some pretty good ones!', to which I laughingly replied, 'We admit it.'"

The story as told by the author, of pioneer practice on the Nebraska prairies has many a counterpart in our own state, and many of the older Iowa physicians can tell of similar experiences. It was the day of the homesteader, when pre-emptions were being secured at \$1.25 per acre, and after five months' residence on the land, title was given to the pre-emptor. It must have been a rare time for the medical sportsman. Prairie chickens and quail abounded everywhere. The seasonal flight of ducks and geese to the northland in the spring, and the southland in the fall, is described as an entrancing sight to behold, for they migrated in flocks of untold thousands and the flight lasted for many days. There were no game laws in those days. The streams were full of fish, notably bass, pickerel and catfish. It is stated that during the early eighties, chan-

nel catfish four feet long and weighing fifty pounds were caught in the Elkhorn River. Buffalo, deer and antelope had disappeared westward, but coyotes, raccoons, skunks, beaver, opossum and badgers were native.

When the author came to Madison, Nebraska, in 1882, dugouts and sod houses still housed many a settler. There were practically no roads, mostly trails, and the lumberwagon was the conveyance of everyday use. The doctor rode an Indian pony and the principal medical equipment was carried in his saddlebags. The little volume contains a host of human stories, tinged with the hardships and privations of the pioneer. The experiences with cholera infantum, scarlet fever, diphtheria, typhoid fever, diabetes, emergency surgery, and obstetric complications in that period must have taxed to the utmost the talents as well as the courage of the medical practitioner.

Dr. Long became one of the leaders of Nebraska medicine. In 1896 and 1897 he served as president of the Nebraska State Medical Society. With the establishment of the Nebraska State Medical Journal in 1916, he became chairman of the publication committee, and in 1920 he assumed the duties of editor. He was honored with a testimonial dinner on April 5, 1932, by 146 representatives of the medical profession of Nebraska to commemorate fifty years of service in one community.

A pleasing close to this interesting story is contained in the two chapters added by Mrs. Long on "The Prairie Doctor's Wife." Her share in it, was as thrilling as that of her pioneer doctor husband. She early took an interest in the auxiliary, serving as the first president of the Nebraska auxiliary, and in 1927 was elected a vice president of the Auxiliary to the American Medical Association. Her closing words seem a fitting summation of her life as a prairie doctor's wife: "And now at the close of fifty-two years, as the wife of one of these doctors (and the same doctor at that), with the office in the home all these years, with that home on the same location for all excepting two of these years, I can speak with real appreciation of the life of sacrifice and devotion that one doctor has given one community. Both of us have given our best."

The life story of these two medical pioneers portrays an era in the medical history of the middle west. Throughout it breathes a spirit of optimism and courage which is refreshing and stimulating.

WALTER L. BIERRING, M.D.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE CEREBROSPINAL FLUID—By Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$5.00.

ESSENTIALS OF PRESCRIPTION WRITING—By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$1.50.

EYESTRAIN AND CONVERGENCE—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s. 6d. net.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE—Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$3.50.

THE PHYSICIAN'S BUSINESS—By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$5.00.

PRACTICAL PROCTOLOGY—By Louis A. Buie, M.D., professor of proctology, The Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.

SURGICAL DISEASES OF THE MOUTH AND JAW—By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

OPERATIVE GYNECOLOGY—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine, and Robert James Crossen, M.D., assistant professor. Fifth edition. Revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.

SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1937.

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY—Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

THE 1937 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT—Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

THE 1937 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF GENERAL SURGERY—Edited by Everts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

BOOK REVIEWS

THE DIAGNOSIS AND TREATMENT OF SEXUAL DISORDERS IN THE MALE AND FEMALE

By Max Huhner, M.D., department of genito-urinary surgery, Mount Sinai Dispensary, New York City. Fourth edition. F. A. Davis Company, Philadelphia, 1937. Price, \$5.00.

The complicated problem of sexual disorders in both sexes is recognized in detail in this volume. The author gives one the impression of extensive clinical study and observation, particularly as it applies to sterility in the male. His technic of the study of spermatozoa after their deposit in the upper vaginal vault, including their location and characteristics by microscopic study, is referred to as the Huhner test. This reviewer feels that the value of the work would be increased by less repetition of facts and by the condensation of numerous descriptive illustrations.

The author should be commended for the rational view he takes with respect to the teachings of Freud as they apply to the sexual neuroses. He disapproves of the psychoneurotic theory only, and emphasizes the importance of local genital pathology. His frank disapproval of the Steinach operation for the correction of impotence in the male again should be upheld. His approach to the problem of masturbation, which he regards as a disease will, I believe, be a distinct aid to the profession, especially when such situations arise in extreme form. The various factors of incompatibility within the home

are intelligently discussed from a therapeutic standpoint, and suggested avenues for correction are given.

The volume may be considered a worthy successor to those which have preceded it and thus is recommended for perusal by the medical profession in general.

W. R. H.

ESSENTIALS OF ELECTROCARDIOGRAPHY

By Richard Ashman, Ph.D., professor of physiology, Louisiana State University Medical Center; and Edgar Hull, M.D., assistant professor of medicine, Louisiana State University. The Macmillan Company, New York, 1937. Price, \$4.00.

This little volume is unique in that its title claims less than its contents warrant. Two individuals who have studied over 20,000 electrocardiographic tracings have learned a great deal about electrocardiograms. When their observations are made upon a basis of a thorough knowledge of the work done by others in the same field, the authors have a clear right to speak with authority on the character and clinical significance of the electrocardiogram. This book has been written by two such men.

The first four chapters give a succinct description of the electrocardiograph, the physical and physiologic basis of the electrocardiogram, and the characteristics of the normal tracings. The variations as to time, direction, and potential of the waves and complexes are discussed more in detail. The last half of the volume deals with the peculiarities of the

electrocardiograms in diseases of the heart. Not only are abnormal variations of the tracings clearly described for standard and chest leads, but a conservative and sound evaluation is also given for each cardiac disease.

Each of the eight chapters is concluded with an excellent bibliography, and the text is well illustrated by one hundred well chosen figures. The appendix contains a list of electrocardiographic signs with their normal limits of duration, amplitude and other characteristics. Students and practitioners will find this volume very helpful, but its greatest sphere of usefulness will be in the many electrocardiographic laboratories now in existence.

D. J. G.

A DIABETIC MANUAL

By Elliott P. Joslin, M.D., clinical professor of medicine, Harvard Medical School. Sixth edition, thoroughly revised; illustrated. Lea and Febiger, Philadelphia, 1937. Price, \$2.00.

Joslin's diabetic manual for the mutual use of the doctor and the patient is replete with useful knowledge. Dr. Joslin believes, and rightly so, that the diabetic patient should learn all he can about his disease. He has demonstrated this fact by statistics of longevity among the diabetic doctors. The chapters deal with definitions, how to figure and weigh the diet, treatment, and complications. An interesting feature of the volume is a chapter on diabetic children. The book should be read and re-read by all individuals suffering with diabetes.

E. B. W.

MENTAL THERAPY: STUDIES IN FIFTY CASES

By Louis S. London, M.D., assistant physician, Central Islip State Hospital, Central Islip, New York. In two volumes. Covici-Friede, publishers, New York, 1937. Price, \$12.50, per set.

In this ambitious work (two large volumes) Dr. London presents the subject of psychoanalysis with a most modern but essentially Freudian interpretation. A few short chapters deal with the author's conception of such fundamental principles as the dream, ego and superego, narcissism, the Oedipus complex, and the place and importance in the neurotic scheme of normal and pathologic sexuality of children and adults.

The bulk of material consists of a detailed account of fifty analyses with interpolated and appended psychoanalytic comment and interpretation. These cases are grouped under the following headings: neuroses, paraphiliac (perversion) neuroses, borderline (latent perversions and psychoses), schizophrenia, and manic depressive psychoses. In reading these case histories one is immediately struck by the author's thoroughness and painstaking effort, by his cleanness of presentation, by his convictions, and by his honesty in admitting therapeutic failures with frankly psychotic material, while at the same time he points out the accepted view that the psychoanalytic approach is

most valuable in understanding psychotic as well as neurotic mechanisms.

While this work may not settle any controversies as to the comparative value of psychoanalysis and other more objective approaches, it should very justly supercede as an authority certain outmoded texts on abnormal psychology, particularly in the realm of sexual psychopathology.

R. C. D.

SYNOPSIS OF DIGESTIVE DISEASES

By John L. Kantor, Ph.D., M.D., associate in medicine, Columbia University. Illustrated. The C. V. Mosby Company, St. Louis, 1937. Price, \$3.50.

This small book is a brief review of digestive diseases, and clearly serves the purpose for which it was intended, that is, to emphasize the ways in which gastro-enterology fits into the larger field of internal medicine. The author presents, in short sound discussions, both the rare and usual conditions found in the gastro-intestinal tract. The relation of disturbances of other systems to digestive disorders is also ably reviewed. Functional as well as organic diseases are treated with clarity from both a clinical and x-ray standpoint, details being necessarily omitted because of the nature of the book. Diseases of the rectum and anus are treated with much less detail than other diseases of the intestinal tract.

While this synopsis gives no added information to one specializing in internal medicine, it serves as an excellent reference for students and general practitioners.

M. J. R.

INTERNATIONAL CLINICS

Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore, Maryland. Volume IV, Forty-seventh Series. J. B. Lippincott Company, Philadelphia and London, 1937.

This volume of the International Clinics contains several medical papers of merit, but extremely valuable contributions in surgical subjects make this volume of especial interest to the surgeon. Verne C. Hunt's discussion of the Indications for and the Selection of Surgical Procedures for Duodenal and Gastric Ulcer, represents a broad experience in gastric surgery.

Arthur W. Allen is the author of a splendid paper on Acute Massive Bleeding from the Upper Gastro-Intestinal Tract, presenting the experience and conclusions from a ten year study at the Massachusetts General Hospital. Like Hunt's paper the surgical indications and procedures are set forth. Excellent case studies illustrate the surgical arguments.

Of exceptional merit is the article on Congenital Anomalies of the Midgut, by Jacob K. Berman of the University of Indiana. A discussion of the embryology and mechanism of rotation precedes a presentation of clinical reports which illustrate the various types of pathology which may be encountered.

This volume maintains the same high standard set by others of the series, and can be recommended as a valuable source of information to the student of medicine.

D. H. K.

THE BABY'S FIRST TWO YEARS

By Richard M. Smith, M.D., assistant professor of pediatrics and child hygiene, Harvard Medical School. New and revised edition. Houghton Mifflin Company, Boston, 1937. Price, \$1.75.

This is the fourth edition of a popular book for the new mother, presenting detailed information which the busy physician frequently fails to impart. The volume includes a description of the nursery, the growth and development and the physical care of the infant, and the technic of breast and bottle feeding. Diet schedules from infancy to two years of age are provided. The chapter on habits and training is excellent.

This should prove to be a helpful book to a new mother, although the equipment advised is too elaborate for the average home. D. H. K.

ORTHODIASCOPY

By Chester M. Kurtz, M.D., assistant professor of medicine, University of Wisconsin. The Macmillan Company, New York, 1937. Price, \$3.50.

This monograph contains an analysis of some 1,700 orthodiascopic examinations chosen from 4,000 examinations carried out at the Wisconsin General Hospital.

In the foreword J. A. E. Eyster states that with the exception of localization of lesions in the central nervous system, we are now able, by the combination of the classical methods with electrocardiography and roentgenology, to localize lesions in the heart more accurately than in any other organ in the body. By orthodiascopy early changes in the size of the heart, as shown by slight deviation from the normal silhouette, can be readily detected. Measurement of the left auricular salient yields diagnostic evidence of a lesion in the mitral valve which can be detected early. The author, however, warns that the use of the x-ray here, as in other fields, has its limitations and if this method is to yield the best and most accurate results, these limitations must be kept in mind.

The progress and assistance obtainable by the application of these newer methods in the study of heart disease are discussed. There is a brief discussion of the historical development of the roentgenologic method for the study of heart size and shape. A comparison is drawn between the importance of diagnosis of early heart disease and pulmonary tuberculosis through the use of x-ray. Where physical signs may be uncertain, orthodiascopy will definitely assist in establishing the diagnosis. Orthodiascopy often offers a means of diagnosing cardiovascular syphilis before it has progressed to the stage of producing definite subjective symptoms and physical signs. Changes found in coronary artery disease, hypertension, congenital heart disease and miscellaneous conditions are discussed.

The volume closes with a brief discussion of the three most valuable physical signs in diagnosing cardiac hypertrophy at the bedside. These have been found accurate in about 90 per cent of the cases.

However, for confirmation and detection of the borderline cases, orthodiascopy is recommended. The book is written clearly and is well illustrated. The diagnosis and localization of heart lesions can undoubtedly be determined much earlier and more accurately by the use of this method. E. E. K.

THE 1937 YEARBOOK OF UROLOGY

By John H. Cunningham, M.D., associate in genito-urinary surgery, Harvard University Postgraduate School of Medicine. 462 pages. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

This annual volume is a comprehensive review of the recorded experiences of recognized authorities in the field of urology during the past year. The material is worldwide in scope, replete with statistical data, difficult to digest, but at the same time presented in readable form.

The author shows remarkable skill in the compilation of data, with the aim in view that the reader can utilize new ideas in the care of the individual patient. The book affords a quick review of the literature as it pertains to this branch of medicine. The author makes a noticeable effort to withhold personal comment on debatable issues, a feature which has been much in evidence in preceding volumes. We hope this personal touch on the part of the author will again be revived in the future.

In addition to the table of contents, a double system of indexing by subject and name of author facilitates the work as a reference manual. Anyone who anticipates the preparation of a paper, or who finds it difficult to keep abreast of the times by personal attendance at meetings, cannot afford to be without a copy of this volume. W. R. H.

A PRIMER FOR DIABETIC PATIENTS

By Russell M. Wilder, M.D., professor of medicine, The Mayo Foundation, University of Minnesota. Sixth edition, reset. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$1.75.

This is the sixth edition of a small, but a most practical volume, representing the substance of the instruction given in the diabetic school at the Mayo Clinic. It is designed for the layman and is written in terms which he can understand. The content includes the important information which is necessary for the patient handicapped by diabetes, to adapt himself to life.

The book contains a brief review of the physiology of diabetes, the technic of Benedict's qualitative reaction and the ferric chloride test for diacetic acid. A chapter is devoted to the use of unmodified insulin and of protamine zinc insulin. The complications of diabetes are presented and their prevention is discussed. One-half of the volume is devoted to the qualitative and quantitative management of the diet, and includes food tables, diet lists and recipes.

This small volume can be recommended to the physician and the diabetic patient as a practical guide in diabetic management. D. H. K.





Edward M. Myers, M.D.

President

Iowa State Medical Society

1937-1938



The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

APRIL, 1938

Number 4

IOWA STATE MEDICAL SOCIETY

Organized in 1850

Eighty-Seventh Annual Session

Des Moines, Iowa, May 11, 12, and 13, 1938

Do not fail to register. Registration Bureau—Hotel Fort Des Moines



PROGRAM

Wednesday, May 11

8:30 a. m.

Main Ball Room

Opening Exercises:

Invocation—

DR. C. CLIFFORD BACON, Pastor,
First Methodist Church

Greetings—

ORAN W. KING, M.D., President, Des
Moines Academy of Medicine and
Polk County Medical Society

Response—

ARCH F. O'DONOGHUE, M.D., sec-
ond Vice President, Sioux City

Address and Clinic:

Diseases Associated with Changes in
the Red Blood Cells—

CYRUS C. STURGIS, M. D., Professor
of Internal Medicine, University of
Michigan, Medical School, Ann Ar-
bor, Michigan

Address and Clinic:

Thoracic Surgical Diseases—

EVARTS A. GRAHAM, M.D., Bixby
Professor of Surgery, Washington
University School of Medicine, St.
Louis, Missouri

Address:

An Important Medicolegal Responsi-
bility in Automobile Accidents—

CHARLES W. ELLYSON, M.D., Wa-
terloo

President's Address—

EDWARD M. MYERS, M.D., Boone

8:30-9:00

Address and Clinic:

Gallbladder Disease—

EVARTS A. GRAHAM, M.D., Bixby
Professor of Surgery, Washington
University School of Medicine, St.
Louis, Missouri

Address and Clinic:

Diseases Associated with Changes in
the White Blood Cells—

CYRUS C. STURGIS, M.D., Professor
of Internal Medicine, University of
Michigan Medical School, Ann Ar-
bor, Michigan

9:00-10:00

10:00-11:00

11:00-11:20

11:20-11:50

Thursday, May 12

9:00 a. m.

Main Ball Room

9:00-10:00

10:00-11:00

11:00-11:20

11:20-11:50

Speakers Bureau Activities—

SYDNER D. MAIDEN, M.D., Council
Bluffs

The General Practitioner as his Own
Otologist—

O. JASON DIXON, M.D., Kansas City,
Missouri

Sectional Conferences

Wednesday Afternoon, May 11

MEDICAL SECTION	SURGICAL SECTION	EYE, EAR, NOSE AND THROAT SECTION
<p>Laurence E. Cooley, M.D., Chairman Main Ball Room</p>	<p>Nelson M. Whitehill, M.D., Chairman Lounge</p>	<p>Abbott M. Dean, M.D., Chairman Tropical Room</p>
<p>Prevention of Poliomyelitis— FRED MOORE, M.D., Des Moines 2:00</p> <p>Discussors— GLENN E. HARRISON, M.D., Mason City CARYL L. NELSON, M.D., Waterloo</p>	<p>Recent Advances in Chest Surgery— N. BOYD ANDERSON, M.D., Des Moines 2:00</p> <p>Discussors— ELMO E. GAMET, M.D., Lamoni CHARLES C. COLLESTER, M.D., Spencer</p>	<p>Management of Glaucoma— T. L. McKEE, M.D., Keokuk 2:00</p> <p>Discussor— J. C. DECKER, M.D., Sioux City</p>
<p>Contact Dermatitis— LOUIS J. FRANK, M.D., Sioux City 2:30</p> <p>Discussors— MAURICE H. NOUN, M.D., Des Moines RUBEN NOMLAND, M.D., Iowa City</p>	<p>Treatment of Infections of the Face and Neck— FRANK M. KEEFE, M.D., Clinton 2:30</p> <p>Discussors— RAYMOND S. GROSSMAN, M.D., Marshall- town ELI F. RAMBO, M.D., Webster City</p>	<p>Treatment of Convergent Squint in Private Practice— JOHN A. THORSON, M.D., Dubuque 2:30</p> <p>Discussor— H. A. BENDER, M.D., Waterloo</p>
<p>Kidney Function Tests WILLIAM C. EGLOFF, M.D., Mason City 3:00</p> <p>Discussors— HYMAN M. HUREVITZ, M.D., Davenport ROBERT J. NELSON, M.D., Clinton</p>	<p>The Interpretation of Upper Abdominal Pain— ROBERT Y. NETOLICKY, M.D., Cedar Rapids 3:00</p> <p>Discussors— ALFRED A. EGGLESTON, M.D., Burlington ANTHONY C. PFOHL, M.D., Dubuque</p>	<p>Retrolubar Neuritis of Uncertain Origin— EDWARD C. NOWAK, M.D., New Hampton 3:00</p> <p>Discussor— ROYAL F. FRENCH, M.D., Marshalltown</p>
<p>Depressive States in General Practice— JOHN I. MARKER, M.D., Davenport 3:30</p> <p>Discussor— RUSSELL C. DOOLITTLE, M.D., Des Moines</p>	<p>Regional Enteritis— JAMES V. PROUTY, M.D., Cedar Rapids 3:30</p> <p>Discussors— FREDERICK W. MULSOW, M.D., Cedar Rapids DONALD H. KAUMP, M.D., Des Moines</p>	<p>Marginal Refractive Errors— ORVAL L. THORBURN, M.D., Ames 3:30</p> <p>Discussor— ABBOTT M. DEAN, M.D., Council Bluffs</p>
<p>Diverticulosis and Diverticulitis— CLAIRE A. TRUEBLOOD, M.D., Indianola 4:00</p> <p>Discussors— H. H. WEBB, M.D., Ottumwa E. B. FLOERSCH, M.D., Council Bluffs</p>	<p>Management of Uterine Malignancy— ROLAND F. MARTIN, M.D., Sioux City 4:00</p> <p>Discussors— ARNOLD L. NELSON, M.D., Winterset JOHN R. PARISH, M.D., Grinnell</p>	

Sectional Conferences

Thursday Afternoon, May 12

MEDICAL SECTION		SURGICAL SECTION		EYE, EAR, NOSE AND THROAT SECTION	
Laurence E. Cooley, M.D., Chairman Main Ball Room		Nelson M. Whitehill, M.D., Chairman Lounge		Abbott M. Dean, M.D., Chairman Tropical Room	
Urinary Antiseptics— EDWARD N. COOK, M.D., Rochester, Minnesota 2:00		Evaluation of Injection Treatment of Hernia— JACOB S. WEBER, M.D., Davenport 2:00		Modern Methods in the Treatment of Mastoid Disease— O. JASON DIXON, M.D., Kansas City, Missouri 2:00	
The Undernourished Child— ROLAND STAHR, M.D., Fort Dodge 2:30		Discussors— ROBERT L. FEIGHTNER, M.D., Fort Madison WALTER A. ANNEBERG, M.D., Carroll 2:30		Sulfanilamide in Otolaryngology— CECIL C. JONES, M.D., Des Moines 2:30	
Delayed Resolution in Broncho- pneumonia— FERN N. COLE, M.D., Iowa Falls 3:00		Treatment of the Abdomen and Associated Complications— ERWIN J. GORTSCH, M.D., Shenandoah Discussors— WALTER A. MATTHEY, M.D., Davenport ROBERT C. KNOTT, M.D., Sioux City 3:00		Discussors— JACK V. TREYNOR, M.D., Council Bluffs HAROLD J. MCCOY, M.D., Des Moines 3:00	
Cardiovascular Syphilis— RAY J. HARRINGTON, M.D., Sioux City 3:30		Treatment of Injuries of Vertebrae and Cord— DONALD C. CONZETT, M.D., Dubuque Discussors— CHANNING E. DAKIN, M.D., Mason City VERL A. RUTH, M.D., Des Moines 3:30		Institutional Epidemic Mastoiditis— SIDNEY G. HANDS, M.D., Davenport Discussor— DEAN M. LIERLE, M.D., Iowa City 3:30	
Intraspinal Tumors: Diagnosis and Recoverability of Cord Function— OLAN R. HYNDMAN, M.D., Iowa City 4:00		Treatment of Craniocerebral Injuries— HARRY E. MOCK, M.D., Chicago, Illinois 3:30		Acute Ear Infections— FRED F. AGNEW, M.D., Independence Discussor— CECIL C. GRANT, M.D., Cedar Falls 3:30	

Wednesday Evening, May 11

8:00 p. m.

Main Ball Room—Hotel Fort Des Moines

Smoker

Medical Minstrels of 1938
"Supercolossal Minstrelating"

Thursday Evening, May 12

ANNUAL BANQUET

Main Ball Room—Hotel Fort Des Moines

6:30 p. m.

Toastmaster—

KENNETH L. JOHNSTON, M.D., Oskaloosa

President's Address—

EDWARD M. MYERS, M.D., Boone

Address by the President-Elect—

ARTHUR W. ERSKINE, M.D., Cedar Rapids

Introduction of Guest Speakers and Section Chairmen—

Music—Dancing—Bridge

Friday, May 13

9:00 a. m.

Main Ball Room

Symposium on Operative Obstetrics—

EVERETT D. PLASS, M.D., Leader

1. General Indications and Contraindications for Operative Delivery— 9:00-9:15

EVERETT D. PLASS, M.D., Iowa City

2. Occiput Posterior as an Obstetric Difficulty— 9:15-9:30

LAWRENCE E. KELLEY, M.D., Des Moines

3. The Forceps Operation— 9:30-9:45

HOWARD A. WEIS, M.D., Davenport

4. The After-coming Head— 9:45-10:00

WILLIAM F. MENGERT, M.D., Iowa City

5. The Cesarean Problem— 10:00-10:15

EVERETT D. PLASS, M.D., Iowa City

6. Other Obstetric Operations— 10:15-10:30

OTTO N. GLESNE, M.D., Fort Dodge

7. The Maternal Hazards of Operative Delivery— 10:30-10:45

JOHN H. RANDALL, M.D., Iowa City

8. Fatal Hazards of Operative Delivery— 10:45-11:00

ROY E. CROWDER, M.D., Sioux City

Address: Medical Economics— 11:00-11:30

REVEREND ALPHONSE M. SCHWITALA, S.J., Ph.D., Dean, St. Louis University School of Medicine, St. Louis, Missouri

Report of House of Delegates and Installation of President— 11:30-12:00

State Society of Iowa Medical Women

Forty-first Annual Meeting

Wednesday, May 11, 1938

6:30 p. m.

DINNER

The Grace Ransom Tea Room

708½ Locust Street

Des Moines, Iowa

PROGRAM

President's Address—

ROSE BUTTERFIELD, M.D., Indianola

Business Meeting—

Scientific Addresses:

Goiter—

IRENE A. KOENEKE, M.D., Halstead, Kansas

Epidemic Encephalitis—

CORA NEGUS, M.D., Keswick

Alcohol in Relation to the Human System—

ROSE BUTTERFIELD, M.D., Indianola

OFFICERS

ROSE BUTTERFIELD, M.D., Indianola.....President

RUTH F. WOLCOTT, M.D., Spirit Lake.....Vice President

NELLE T. SCHULTZ, M.D., Humboldt.....Secretary

JEANNETTE DEAN-THROCKMORTON, M.D., Des Moines...Treasurer

AMERICAN MEDICAL WOMEN'S
ASSOCIATION

Branch 19

Wednesday, May 11, 1938

12:15 p. m.

Buffet Luncheon at the home of Dr. Grace Doane,
2500 West Grand Avenue, Des Moines

OFFICERS

President.....GRACE O. DOANE, M.D., Des Moines

Secretary-Treasurer.....PAULINE V. MOORE, M.D., Iowa City
1002½ Clinton Avenue

OUR GUESTS



CYRUS C. STURGIS, M.D.,
Ann Arbor, Michigan



O. JASON DIXON, M.D.,
Kansas City, Missouri



EVARTS A. GRAHAM, M.D.,
St. Louis, Missouri



EDWARD N. COOK, M.D.,
Rochester, Minnesota



HARRY E. MOCK, M.D.,
Chicago, Illinois

HOUSE OF DELEGATES

Cabin

Wednesday, May 11

3:30 p. m.

Roll Call

Approval of Minutes of Friday Morning Session,
1937

Report of Secretary

Report of Treasurer

Report of Board of Trustees

Report of Council

Report of the Delegates to the American Medical
AssociationReports of Standing Committees of the House of
Delegates:

Committee on Constitution and By-Laws—

JOHN H. HENKIN, M.D., Sioux City, Chairman

Committee on Finance—

ERNEST C. McCURE, M.D., Bussey, Chairman

Committee on Medical Economics—

THOMAS F. THORNTON, M.D., Waterloo, Chairman

Committee on Medical Education and Hospitals—

JACK V. TREYNOR, M.D., Council Bluffs, Chairman

Medico-Legal Committee—

FRANK A. ELY, M.D., Des Moines, Chairman

Committee on Publications—

LEE F. HILL, M.D., Des Moines, Editor

Committee on Public Policy and Legislation—

FRED MOORE, M.D., Des Moines, Chairman

Committee on Necrology—

JAMES E. REEDER, M.D., Sioux City, Secretary

Reports of Special Committees of the House of Dele-
gates:

Baldridge-Beye Memorial Committee—

JULIUS S. WEINGART, M.D., Des Moines, Chairman

Committee on Child Health and Protection—

ROBERT H. McBRIDE, M.D., Sioux City, Chairman

Historical Committee—

WALTER L. BIERRING, M.D., Des Moines, Chairman

Medical Library Committee—

JEANNETTE DEAN-THROCKMORTON, M.D., Des Moines
Librarian

Committee on Military Affairs—

ROBERT S. SHANE, M.D., Pilot Mound, Secretary

Public Relations Committee—

WALTER R. BROCK, M.D., Sheldon, Chairman

Committee on Scientific Exhibits—

FRANK P. McNAMARA, M.D., Dubuque, Chairman

Woman's Auxiliary Advisory Committee—

C. B. HICKENLOOPER, M.D., Winterset, Chairman

Reports of Council Committees:

Speakers Bureau Committee—

D. J. GLOMSET, M.D., Des Moines, Chairman

Cancer Committee—

F. P. McNAMARA, M.D., Dubuque, Chairman

Memorials and Communications

New Business

Election of Committee on Nominations

Friday, May 13

7:30 a. m.

Cabin

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Unfinished Business

New Business

Adjournment

ENTERTAINMENT

Tuesday, May 10

Afternoon

Wakonda Club

Pre-Convention Golf Tournament

Wednesday, May 11

2:00 p. m.

Garden Tea

Woman's Auxiliary and Visiting Women

Wednesday, May 11

8:00 p. m.

Stag and Smoker

Hotel Fort Des Moines

6:30 p. m.

State Society of Iowa Medical Women

Banquet and Program

Grace Ransom Tea Room

7:00 p. m.

Woman's Auxiliary Friendship Dinner

Younkers Tea Room

8:00 p. m.

Bridge Party or Theater

Woman's Auxiliary and Visiting Women

Younkers Tea Room

Thursday, May 12

Auxiliary Luncheon, Hotel Fort Des Moines

All Visiting Ladies Invited

6:30 p. m.

Annual Banquet, Ball Room,

Fort Des Moines Hotel

Physicians, Their Wives and Guests

Arrangements Committee

EDWARD M. MYERS.....	Boone
ROBERT L. PARKER.....	Des Moines
HAROLD J. MCCOY.....	Des Moines
HAROLD C. BONE.....	Des Moines
FRANK W. FORDYCE.....	Des Moines

Local Committees

Entertainment Committee—

LEONARD A. WEST, Chairman

WALTER D. ABBOTT

DOUGLAS N. GIBSON

JOHN H. MATHESON

Smoker Committee—

HAROLD J. MCCOY

LOREN K. MEREDITH

HEADQUARTERS



MEETING PLACES

Hotel Headquarters—Fort Des Moines Hotel
 General Headquarters—Fort Des Moines Hotel
 General Session Meetings—Main Ball Room, Fort Des Moines Hotel
 Medical Section—Main Ball Room, Fort Des Moines Hotel
 Surgical Section—Lounge, Fort Des Moines Hotel
 Eye, Ear, Nose and Throat Section—Tropical Room, Fort Des Moines Hotel
 House of Delegates—The Cabin, Fort Des Moines Hotel
 Registration Desk—Mezzanine Floor
 Commercial Exhibits—Lobby and Mezzanine Floors, Fort Des Moines Hotel
 Scientific Exhibits—South Ball Room, Fort Des Moines Hotel
 Moving Picture Theater—Green Room, Fort Des Moines Hotel
 Headquarters for State Society of Iowa Medical Women—Grace Ransom Tea Room
 Headquarters for Woman's Auxiliary—Fort Des Moines Hotel

SPECIAL MEETINGS

Iowa Alumni Association Luncheon
 Wednesday, May 11
 Lounge, Fort Des Moines Hotel, 12:15 p. m.
 County Secretaries Conference Luncheon
 Wednesday, May 11
 Tropical Room, Fort Des Moines Hotel, 12:15 p. m.
 Past President's Luncheon
 Wednesday, May 11
 Tropical Room, Fort Des Moines Hotel, 12:15 p. m.
 Military Surgeons' Dinner
 Wednesday, May 11
 Lounge, Fort Des Moines Hotel, 6:30 p. m.
 Eye, Ear, Nose and Throat Section Luncheon
 Thursday, May 12
 Lounge, Fort Des Moines Hotel, 12:15 p. m.

Section Chairmen and Reporters

Section on Medicine—

Chairman, LAURENCE E. COOLEY, M.D., Dubuque

Section on Surgery—

Chairman, NELSON M. WHITEHILL, M.D., Boone

Section on Ophthalmology, Otology, and Rhinolaryngology—

Chairman, ABBOTT M. DEAN, M.D., Council Bluffs

Reporter, General Sessions and House of Delegates—
 Master Reporting Company, Chicago

Rules for Papers and Discussions

For the general session meetings, no address or paper, except those of the President and the Guests, shall occupy more than twenty minutes in its delivery. All papers read before the Society shall be the property of the Society. Each paper should be deposited with the Secretary when read; if this is not done, it will not be published.

In most of the sectional meetings, the talks are twenty minutes in length. Discussions may not be longer than five minutes. A typewritten copy of each talk should be left with the chairman of the section so that it can be published in the Journal.

Do not fail to register. Your badge will permit you to attend all scientific and social sessions of the Society.

Please bring your membership card for presentation at the registration desk. It entitles you to attend the meeting without cost.

Women attending the meeting are urged to register at the registration desk for the Woman's Auxiliary on the third floor of the hotel.

WOMAN'S AUXILIARY

Iowa State Medical Society

Organized May 9, 1929, Des Moines, Iowa

Ninth Annual Meeting

Registration Headquarters

Hotel Fort Des Moines

PROGRAM

Wednesday, May 11, 1938

1:00 p. m.

Hotel Fort Des Moines

Preconvention Meeting
For Board of Directors and County
Auxiliary Presidents

2:00 to 5:00 p. m.

Automobile Drives and Garden Tea

7:00 p. m.

Younkers Tea Room

Friendship Dinner

Bridge Party or Theater

All visiting women as well as Auxiliary members
are invited to attend

Thursday, May 12

9:00 a. m.

Assembly Room, Hotel Fort Des Moines
President, Mrs. S. E. Lincoln, Presiding

Invocation—

MRS. C. A. BOICE, Washington

Address of Welcome—

MRS. A. E. MERKEL, Ankeny

Response—

MRS. DEAN W. HARMAN, Glenwood

In Memoriam

Report of the President

Announcement of Committees

Report of Standing Committees

Award of Membership Cup—

MRS. J. A. DOWNING, Des Moines

Report of Registration—

MRS. HUGH B. WOODS, Des Moines

Symposium: Public Relations—

MRS. H. W. MORGAN, Mason City, Presiding

MRS. W. A. SEIDLER, Jamaica; MRS. M. C. HENNESSY,
Council Bluffs; MRS. MARION H. BRINKER, Yale; MRS.
FREDERICK MURRAY, Cedar Rapids; MRS. W. W. BOND,
Des Moines

Summary—

DR. WALTER R. BROCK, Sheldon

Open Forum Discussion: Led by—

DR. WALTER R. BROCK, Sheldon

Announcements—

MRS. CHARLES RYAN, Des Moines, Chairman
Committee on Arrangements

Adjournment

12:15 p. m.

Luncheon

Tropical Room, Hotel Fort Des Moines

Mrs. E. A. Hanske, Presiding

Music

Greetings—

EDWARD M. MYERS, M.D., Boone
President, Iowa State Medical Society

Greetings—

ARTHUR W. ERSKINE, M.D., Cedar Rapids
President-Elect, Iowa State Medical Society

Address: Mental Hygiene—

JOHN I. MARKER, M.D., Davenport

2:00 p. m.

Afternoon Session

Assembly Room, Hotel Fort Des Moines

Music

Address—

MRS. CHARLES C. TOMLINSON, Omaha, President-
Elect Woman's Auxiliary to the American Medical
Association

Your Central Office—

MISS PATRICIA SPAULDING

Winning Essay—"Highway Hazards"

Report of County Presidents

Report of Resolutions Committee—

MRS. S. E. LINCOLN, Presiding

Election of Officers

Installation of Officers—

MRS. M. N. VOLDENG, Presiding

Adjournment

4:00 p. m.

Post Convention Board Meeting

6:30 p. m.

BANQUET

Ball Room, Hotel Fort Des Moines

Physicians, Wives, and Guests

This program, social and business, is for all visit-
ing women. All eligible women are urged to become
members.

Des Moines—Convention City

Once again Des Moines is to be host to the annual meeting of the Iowa State Medical Society. The city is too well-known to the physicians who have attended meetings here in the past to need any description. Needless to say, it will be easy to procure hotel accommodations at the Hotel Fort Des Moines, the Savery Hotel, The Kirkwood Hotel, The Chamberlain Hotel, the Brown Hotel, and the Commodore Hotel. There are many places of entertainment in which those who wish to do so may spend the time when not attending the sessions of the State Society. Physicians' wives will find many shops in which to loiter.

The program arranged is well-rounded, and brings excellent men to Iowa. There will be six speakers from outside of the state, and the balance will be comprised of men in practice here in Iowa. The general sessions will provide programs of interest to all physicians; the sectional afternoon meetings will furnish more specialized papers on three divisions of medicine; medical, surgical, and eye, ear, nose and throat.

Entertainment will start Tuesday afternoon with the preconvention golf tournament which is to be held at the Wakonda Club. An announcement concerning it will be found elsewhere in this issue.



The meetings this year will be held at the Hotel Fort Des Moines. The general sessions will be held in the main ball room, and the sectional meetings in the ball room, the Tropical Room, and the lounge. The commercial exhibits will have space on the mezzanine and lobby floors. The scientific exhibits will be found in the south ball room. A new venture, a showing of scientific moving pictures prepared by physicians in the state, will be inaugurated this year. These films will be shown in the Green Room, a small room adjoining the south ball room.

Another new exhibit this year will be one of hobbies. A show of the various hobbies in which the members find relaxation will be found on the mezzanine floor.

The secretaries' luncheon will be held on Wednesday, and at the same time it is hoped that all the past presidents of the State Society may attend their luncheon, a custom which was introduced last year at Sioux City.

The House of Delegates will find a comfortable meeting room in the Cabin, on the top floor of the hotel. The first meeting will be held Wednesday afternoon at three-thirty; and the second meeting Friday morning at seven-thirty. Arrangements will be made with the hotel to serve an early breakfast so as to allow delegates time for breakfast before this meeting, and still not keep them from the general session which starts at nine o'clock.

The Des Moines Academy of Medicine and Polk County Medical Society will be hosts at a smoker Wednesday evening, to which all members are invited. Thursday evening the physicians, wives, and guests are invited to attend the annual banquet.

The American Medical Women's Association, Branch 19, will be entertained Wednesday noon by Dr. Grace Doane at her home.

The State Society of Iowa Medical Women will hold its annual dinner at the Grace Ransom Tea Room Wednesday evening, May 11, followed by a scientific program.

The Woman's Auxiliary will be entertained Wednesday afternoon by automobile drives, followed by a garden tea. All women are invited to attend the friendship dinner at Younkers' Tea Room Wednesday evening, following which there will be bridge or theater parties. Thursday will be devoted to business meetings of the Auxiliary, to be followed that night by the annual banquet of the State Medical Society.

Those who have attended meetings in the past will find much that is new in this meeting. Those who are attending for the first time may be assured that they will find much that is valuable and interesting to them. All in all, it is hoped that many physicians will make plans now to attend the Eighty-Seventh Annual Session of their organization.

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DISEASES OF THE PERICARDIUM

HARRY L. SMITH, M.D.,
Section on Cardiology,

The Mayo Clinic, Rochester, Minnesota

Disease of the pericardium is relatively frequent and it varies from a serious condition to one that is wholly unimportant. The following is a workable classification of diseases of the pericardium:

- I. Acute pericarditis
 - A. Fibrinous, with or without effusion
 - B. Purulent and hemorrhagic
 - C. Pneumopericardium
 - D. Hydropericardium
- II. Chronic pericarditis
 - A. Chronic adhesive
 - B. Calcification of pericardium
- III. Tumors of pericardium
- IV. Congenital defects

ACUTE FIBRINOUS PERICARDITIS

This is the most frequent type of pericarditis and if uncomplicated, the least serious. It may be the forerunner of a more serious type of pericarditis; for example, pericarditis with effusion or purulent pericarditis. It may terminate in adherent pericarditis.

Etiology: Acute fibrinous pericarditis may be attributable to infection. Accordingly, it may accompany or follow rheumatic fever, pneumonia, influenza, tonsillitis, or tuberculosis. Intrathoracic infections other than pneumonia which may give rise to this condition are empyema, lung abscess, and malignancy of the lung with infection. Infections elsewhere in the body also may cause acute fibrinous pericarditis; some of these are peritonitis, pyelonephritis, and perforated gastric ulcer. So-called noninfectious pericarditis may be associated with cardiac infarction. Another so-called noninfectious form of the condition is terminal, or uremic pericarditis.

Pathology: The pericardium is infiltrated by mononuclear and polymorphonuclear leukocytes and the infiltration is followed by the formation of a layer of fibrin.³ The region of pathologic change may be small and localized or it may be extensive, involving both the visceral and parietal layers. The exudates may be very thin or one centimeter in thickness. When the exudate is thick, its surface may be uneven, and stringy, shredded masses of fibrin will be found attached to it. Because of the appearance brought about by these pathologic changes, this type of pericarditis sometimes is called the "bread and butter" type. Normally, ten to fifty cubic centimeters of pericardial fluid are present. In the presence of

acute pericarditis the pericardial fluid may be slightly or greatly increased in amount. The process usually undergoes resolution and repair; there even may be no residual scar. The pericardium may be slightly thickened or the pericardial sac may be partially or completely obliterated by the formation of extensive adhesions; by this means, the heart may be anchored to the diaphragm, thoracic wall, pleura, or mediastinum. It is believed that at least 150 cubic centimeters of pericardial fluid must be present before it can be recognized clinically.

Symptoms: The condition may be painless or pain may be excruciating, and such pain often is confused with that of pleurisy, cardiac infarction or pulmonary embolism. If the amount of effusion is small, there may be no symptoms. If the amount of effusion is large, and especially if the effusion develops rapidly, symptoms of pressure may be extreme. Such symptoms arise from compression of the heart, which in turn causes insufficient blood to enter the heart, lungs and systemic arteries, resulting in dyspnea, weakness, and venous congestion. Compression of the lungs, trachea, bronchi, esophagus, and great vessels produce dyspnea, orthopnea, cough, and hoarseness. Distressing dyspnea and thoracic oppression are frequent symptoms of large pericardial effusion. The pericardial friction rub may or may not be heard. It was heard in 20 per cent of Cabot's series² and in twelve per cent of the series reported by Smith and Willius.⁴ It may be heard anywhere over the precordium, most often along the left border of the sternum. It is usually a superficial, rough, grating sound, easily recognized as a rule, but occasionally difficult to distinguish from heart murmurs. As a rule it is heard both in systole and in diastole. It may be heard only in one phase of respiration. It may be a transient and last only a few hours or it may last for weeks, unchanged. Sometimes it can be palpated. The friction rub most often disappears with development of pericardial effusion. A small amount of pericardial effusion does not alter the blood pressure, but large amounts may lower the systolic blood pressure and diminish the pulse pressure. With large amounts of effusion the radial pulse may disappear during inspiration; this is the so-called paradoxical pulse.

The earliest sign, roentgenologically, is bulging of the lower corners of the heart shadow owing to the collection of fluid in these regions. When large amounts of fluid are present, the roentgenogram often is characteristic. The shape of the shadow frequently will change with a shift of the position of the body. In the recum-

bent position the shadow often is globular, and in the upright position it is pear-shaped. Of course, when there is any doubt as to the presence of pericardial fluid, a needle should be inserted into the pericardium. Of 113 cases of pericarditis with effusion in which necropsy was performed at The Mayo Clinic, seventy-seven were cases of purulent pericarditis, nineteen were cases of fibrinous pericarditis with effusion, and two were cases of noninflammatory pericarditis with effusion.

The electrocardiographic changes associated with acute pericarditis, in some instances, are characteristic.¹ One of these changes is the elevation of the S-T segment in leads I, II, and III. In some instances, the elevation is marked; this change may be confused with that which occurs in association with acute myocardial infarction, especially when such infarction is accompanied by pericarditis. The characteristics which help in differential diagnosis of simple pericarditis and pericarditis with myocardial infarction are: in simple pericarditis one sees elevation of the S-T segment, its high take-off, and its rather flat, level contour; while in myocardial infarction, the S-T segment is dome-shaped and there are other characteristic changes. Characteristic electrocardiographic findings are not always associated with acute pericarditis. It is a known fact that acute pericarditis may occur with a friction rub and the electrocardiographic findings may be entirely normal. Just why the electrocardiographic changes occur so characteristically in some instances, but not in others, is not well understood. As a rule, there are no characteristic electrocardiographic changes in chronic pericarditis, but in some instances when there is extensive fixation of the heart by adhesion to surrounding structures, fixation of the electrical axis is present.

CHRONIC ADHESIVE PERICARDITIS

Adherent pericarditis is acknowledged to be one of the most difficult cardiac conditions to diagnose. This statement is confirmed by an analysis of records of findings at necropsy. In relatively few cases is the condition positively identified while the patient is alive. Foremost among numerous reasons for this, is the complete absence, in some instances, of signs and symptoms. Of 8,912 necropsies performed at the Clinic, pericarditis was found in 373, an incidence of 4.2 per cent. Of the 373 cases of pericarditis, 144 were cases of chronic adhesive pericarditis.⁴ The pericardial cavity was completely obliterated in 44 per cent and partially obliterated in 46 per cent of the cases. A large majority of the patients were males. The pericardium was partially

calcified in fifteen cases and associated cardiac disease had occurred in seventy-seven cases (53.5 per cent). Recognition of deposits of calcium in the pericardium by means of roentgenologic examination is an aid in establishing the diagnosis of chronic adhesive pericarditis.

Treatment: Treatment of pericarditis is usually the treatment of the underlying cause, such as rheumatic fever, tuberculosis, pneumonia, influenza, lung abscess, and so forth. The pain should be controlled by morphine, salicylates, or codeine. An ice bag over the precordium may help. If purulent pericarditis occurs, it may be necessary to evacuate and drain the pus by means of a trocar or by surgical operation. If large amounts of pericardial fluid are present, it should be withdrawn; 1500 cubic centimeters of fluid may be aspirated at one time. This gives great relief. In most cases of chronic adhesive pericarditis, there is no need for specific treatment. There are two important surgical procedures, both of which are known as "cardiolysis" (freeing the heart). They are: first, removal of the ribs, if there are extensive adhesions to the thoracic wall; and second, excision of the pericardium and the adhesions, if there is compression of the heart. Dramatic relief has been obtained, in many instances, by these procedures. Cutting of the phrenic nerve may give a great deal of relief. Cardiac decompensation owing to pericarditis is treated, as is any other form of cardiac decompensation.

REFERENCES

1. Barnes, A. R.: Personal communication to the author.
2. Cabot, R. C.: *Facts on the Heart*, p. 645, W. B. Saunders Company, Philadelphia, 1926.
3. MacCallum, W.G.: *A Textbook of Pathology*, p. 224, W. B. Saunders Company, Philadelphia, 1932.
4. Smith, H. L., and Willius, F. A.: Pericarditis. *Arch. Int. Med.* 1:171-202 (August) and 410-418 (September) 1932.

MEDICOLEGAL ASPECTS OF ALCOHOLISM

HAROLD W. MORGAN, M.D., Mason City

In the days of the horse and buggy it was probably reasonably safe for an individual to take a drink or even several drinks and still be on the highway, but with the advent of the automobile, many changes in our ways of living have come about. During the prohibition era we thought the problem would be solved and that we would have no drunken drivers, but this was not the case. Then we were told that if prohibition was repealed and men were allowed free access to intoxicating liquors, the problem would again be solved. However, this seems to have failed to bring the correct solution to the problem, and we are faced today with the necessity of dealing with the drunken driver. With the in-

creased number of cars on the road and the increased power and speed of automobiles, some adequate control of the traffic problem is being sought.

The question of the percentage of accidents caused by drinking drivers is an open one. One can find figures to show that alcohol is involved in less than one per cent of the accidents, and other individuals would have you believe that all accidents are directly traceable to liquor in some form or another on the part of one or both drivers. As is usually the case in such controversies the truth lies somewhere between the two extremes. Heise¹ of Milwaukee, to whom I am indebted for the work on this test, recently investigated a series of fifty consecutive automobile accidents. In this series, alcohol was involved in 32 cases and no alcohol in 18. In the 32 alcohol accidents 71 were injured and four were killed. In the no alcohol cases 23 were injured and none was killed. The coroner in Cleveland, Ohio, recently reported his investigations on a series of over 300 fatal accidents. He found that alcohol was involved in 55 per cent of these cases.

Doctors are usually drawn into the controversy in an effort to determine whether or not some particular individual was or was not drunk, and they are often asked to determine the extent of intoxication in certain cases. Almost all of us have had the experience of examining intoxicated individuals and most of us will agree that under ordinary circumstances there is no great difficulty involved in arriving at a decision in regard to these questions. There are instances where an individual may be suddenly sobered by an accident. There are also instances where concussion or some other disease process may be mistakenly called intoxication. We have all of us had experience at one time or another on the witness stand where lawyers have cross-examined us as to the condition of a patient accused of being intoxicated. In Mason City it is very difficult to get a physician to swear on the witness stand as to the condition of such a patient. Legally it is almost impossible, without laboratory aid, to make an unquestioned statement as to a person's condition or the amount of alcohol which he has consumed.

About two years ago I became interested in this problem from a laboratory standpoint and since that time have experimented with several methods of determining the extent of intoxication by examinations of the blood and urine of patients. Several procedures have been tried in different laboratories and I have worked with each of them in turn to determine the simplest

and most reliable. The first such tests were conducted by Nicloux in France and a great deal of work has been done on the Continent to make these tests available in police courts. The tests are all based upon the principle that in strongly acid media, alcohol gives a color reaction which is directly proportional to the amount of alcohol present.

TECHNIC OF TEST

Distill a mixture of ten cubic centimeters of urine with about ten cubic centimeters of half saturated picric acid containing about ten per cent tartaric acid, collecting the first ten cubic centimeters of the distillate, and mix. In separate tubes similar to those used for the standards, place one cubic centimeter in one, and smaller measured amounts in the others, making the volume up to one cubic centimeter in each case. Add three cubic centimeters of the $K_2Cr_2O_7$ reagent to each tube, and place in boiling water bath for four minutes. Compare colors with those of the standard scale. Divide the reading by the fraction of a cubic centimeter of distillate used, which gives the percentage of alcohol by weight. The use of several tubes permits a close checking of the results and gives greater opportunity for having readings on the scale. If the results are too low to be read, use the weak standards; using two cubic centimeters of the distillate and known smaller amounts, bringing the volume to two cubic centimeters in each case.

STRONG PERMANENT STANDARDS

Color Standards containing per cent alcohol by weight	Prepared by Using	Alcohol by weight	With Water cc.
0.0			1.00
0.05	0.50 cc. of 0.10 per cent	"	0.50
0.10	1.00 cc. of 0.10 per cent	"	0.0
0.12	0.60 cc. of 0.20 per cent	"	0.40
0.14	0.70 cc. of 0.20 per cent	"	0.30
0.16	0.80 cc. of 0.20 per cent	"	0.20
0.18	0.90 cc. of 0.20 per cent	"	0.10
0.20	1.00 cc. of 0.20 per cent	"	
0.22	0.73 cc. of 0.30 per cent	"	0.27

To each tube add 3 cc. N/15 $K_2Cr_2O_7$ (0.33 per cent in 50 per cent H_2SO_4). Place tubes in boiling water four minutes and seal.

Add one cubic centimeter of the reagent and place tubes in boiling water for twelve minutes. If blood is being tested take two cubic centimeters of whole blood, plasma, or serum (all give the same results), add about fifteen cubic centimeters of the picric-tartaric reagent, and collect the first ten cubic centimeters of the distillate. This is tested on the weak standard scale and the result multiplied by five.² The $K_2Cr_2O_7$ reagent is 0.33 per cent $K_2Cr_2O_7$ in 50 per cent H_2SO_4 . The test is extremely accurate.³ Two technicians can consistently check results within one hundredth of a per cent when the strong standards are used, and

within two one thousandths of a per cent when the weak standards are used. There are other substances which will reduce potassium dichromate, giving a color reaction similar to that derived from alcohol. However, all of these substances, such as chloroform, ether, chloral hydrate, salicylate and acetone are eliminated in the process of distillation.

In interpreting the test, the level at which legal intoxication is said to be present has been fixed by almost all authors at 200 milligrams, or near that figure. A few individuals will show clinical intoxication at 150 milligrams of alcohol per ten cubic centimeters of blood, and an occasional individual may not show all the clinical signs at

WEAK PERMANENT STANDARDS				
Color Standards containing per cent alcohol by weight	Prepared by Using			With Water
			Alcohol by weight	cc.
0.005	1.0	cc. of 0.01	per cent	1.0
0.010	2.0	cc. of 0.01	per cent	0.0
0.013	0.52	cc. of 0.05	per cent	1.48
0.016	0.64	cc. of 0.05	per cent	1.36
0.019	0.76	cc. of 0.05	per cent	1.24
0.022	0.88	cc. of 0.05	per cent	1.12
0.025	1.00	cc. of 0.05	per cent	1.00
0.028	1.12	cc. of 0.05	per cent	0.88
0.031	1.24	cc. of 0.05	per cent	0.76
0.034	1.36	cc. of 0.05	per cent	0.64
0.037	1.48	cc. of 0.05	per cent	0.52
0.040	1.60	cc. of 0.05	per cent	0.40

Add 1 cc. $K_2Cr_2O_7$ reagent to each tube. Place tubes in boiling water bath twelve minutes.

200 milligrams. Heise in his article places the figure at 190 milligrams. Bogen⁴ in 1928, found that a concentration of 100 milligrams per 100 cubic centimeters of urine indicated a condition called decent and decorous; 200 milligrams per 100 cubic centimeters, distinctly drunk; 300 milligrams per 100 cubic centimeters, drunk and disorderly; and 400 milligrams per 100 cubic centimeters, dead drunk. In 1930, Johnson⁵ of the Naval Hospital in New York confirmed these findings.

The normal rate of elimination for alcohol is ten to twenty milligrams per hour. By taking two tests one hour or more apart, the rate for the individual may be determined, and his condition at a previous time may be calculated, provided he has taken no alcohol in the interval. This is valuable in dealing with hit and run drivers.

It is not necessary for an individual to be intoxicated in the legal sense of the word for him to be a menace on the highway. Small amounts of alcohol have a definite effect upon the driver's reaction time and upon his ability to meet unusual situations. With as little as 20 milligrams per 100 cubic centimeters of blood, reaction time is definitely prolonged. With 100 milligrams per 100 cubic centimeters the reaction time is in-

creased by about 60 per cent above normal for that individual. I personally believe anyone with over 100 milligrams per 100 cubic centimeters of blood should not be driving a car. There is no tolerance developed for alcohol in the sense of an increased tolerance to drugs such as morphine. It is true that one individual can take large amounts of alcohol without becoming intoxicated, while others can take very much smaller amounts and immediately become intoxicated. Two factors are involved in this consideration: An individual who is accustomed to taking large amounts of alcohol holds the alcohol in his gastro-intestinal tract for much longer periods of time than one who is not used to it. In other words, it is absorbed much more slowly into the blood of the habitual drinker than it is in the one not used to alcohol. Physiologically, alcohol in the stomach is still outside of the body. An individual used to alcohol can also destroy it at a rate approximately one-third faster than the individual not used to it, after it has been absorbed in the blood. It will therefore take larger amounts of alcohol or longer periods of time or both, for habitual users to reach the same level of intoxication which might be reached by another individual in a much shorter period of time. When the two individuals reach the same level they will be equally intoxicated.

The legal status of the test in Iowa has not been completely determined as yet. Evidence derived from such tests has been admitted in some of our district courts. So far, all tests admitted have been taken voluntarily. There is some legal opinion that compulsory tests should also be admitted⁶. If a physician takes the blood or urine for a test, he must be careful to avoid any action or treatment which might be construed to form a privileged relationship between the physician and the accused. The specimen must be carefully guarded and must be transported between the point of taking and the laboratory where it is examined so that there can be no question of tampering with the specimen. The following results obtained by using these tests are of interest:

In Case 1, the evidence of the test was admitted by Judge Graven, and after its admission, a plea of guilty was accepted. Since the trial was not finished, the opinion of Judge Graven was not widely published. Case 2 was freed on a manslaughter charge, then convicted of driving while intoxicated, with blood test the only additional evidence. Case 3 and 4 had "split the bottle." Notice the even distribution of the alcohol. Case 6 was held for driving while intoxicated, but was freed after the test showed no alcohol, thus proving that the test is absolute

Name	Alcohol Content per 100 cc.	Body Fluid	Result of Case
O.E.S.	205 mgs.	Urine	Plead guilty to a lesser charge.
D.T.	206 mgs.	Blood	First test case. Convicted.
J.W.	196 mgs.	Blood	Plead guilty.
D.W.	204 mgs.	Blood	Plead guilty.
	220 mgs.	Urine	
C.S.M.	160 mgs.	Urine	Plead guilty.
A.J.	0 mgs.	Urine	Freed.
C.R.C.	410 mgs.	Urine	Found guilty.
C.L.	252 mgs.	Urine	Found guilty.
D.C.	212 mgs.	Urine	Found guilty.
H.L.	270 mgs.	Urine	Found guilty.
H.I.	300 mgs.	Urine	Plead guilty.
C.O.	190 mgs.	Blood	Plead guilty.

protection for one who has been falsely accused. Case 7, with the largest amount of alcohol in my series, was reported by the town marshal to be "the drunkest man I ever saw." Mr. Daly, county attorney of Hancock county, reported to me in a personal communication that he had secured convictions in every case where he had used the test.

SUMMARY

There is available a scientific test by which we can determine the exact state of intoxication of any individual. The test is simple, accurate and specific for alcohol. It has been accepted by some of our Iowa courts. Its more general use would bring about more convictions in cases of intoxication while driving a motor vehicle.

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ROENTGEN THERAPY IN CERTAIN INFECTIONS*

DAVID M. EARL, M.D., Iowa City

The use of roentgen irradiation for treatment of infections is not a new field of therapy, nor is it recent. Nevertheless a great many physicians are unaware of its value as a therapeutic agent in many of the common infections. Many of the claims made for the therapeutic use of irradiation are still based on empiric evidence, and practical applications are made without scientific support.

The question arises as to whether irradiation acts by hastening the natural life cycle or de-

struction of the white blood cells or as a destructive agent to bacteria. Leukocytes are the most sensitive of the human tissues to irradiation and require only small amounts to destroy them. The leading investigators¹ feel that this destruction liberates protective substances which overwhelm the infection with abortion of the process or accelerate the usual tissue response. Failure of the white blood cells to release the protective substances, or their too gradual release, may be the difference between a favorable and an unfavorable prognosis. When treated early there is usually relief of pain within a few hours. However, accentuation of pain may precede relief. Rapid resolution is also to be expected. When treatment is given after the earliest stages, phagocytosis and suppuration tend to be hastened, and surgical drainage may have to be instituted sooner than if irradiation had been omitted.

This form of treatment is efficient, painless and does not interfere with the patient's activities. Patients in a weakened or exhausted condition may be treated without exertion on their part. It does not contraindicate other forms of therapy which the referring physician might care to institute. However, a synergistic action which might be attributed to additional or complementary treatment has not been the experience to date. Improvement lasting only a few days does not necessarily mean failure, but indicates the necessity for a repetition of the irradiation and careful watching. Not all infections respond favorably but many do. If the pathologic process is not favorably influenced, its evolution is not perceptibly altered. We are unaware of a definite contraindication to irradiation therapy in a patient who has not previously been so treated.

The best results are obtained when irradiation is given early in the evolution of infectious processes, but favorable changes are to be expected when treatment is given at any stage. This does not mean that surgical drainage can be dispensed with when indicated. The proper dosage is the smallest one which may be expected to produce the desired result. This does not exceed two hundred roentgens to any one area during a twenty-four hour period. If a larger amount is given there is no harm done, but the result is delayed for some, as yet unknown, reason. Total dosage in acute infections is not sufficient to produce skin changes as the result of irradiation. In certain chronic infections where the dosage is greater and treatment has to be repeated at intervals of four, six or eight weeks, slight skin changes may be expected in the form of pigmentation and dryness. Dosage is also influenced by the type, location and stage of the infection.

* Presented before the Johnson County Medical Society, Iowa City, May 5, 1937.

The question often arises as to whether radium or roentgen ray should be used in the treatment of an infection. This point will be decided by the therapist's previous experience, availability of the therapeutic agents, character, location and extent of the process. It is felt that equally good results may be obtained with either agent. However, other things being equal, the roentgen rays are preferred because of the comparative ease of application, especially to large or tender areas and the shortness of the irradiation time.

TYPES OF DISEASES FAVORABLE TO THERAPY

Erysipelas when treated early, within twenty-four or forty-eight hours, responds by a marked decrease of the pain and edema while the lesion blanches steadily. Chronic cases do not respond so well. We feel that treatment is indicated at any stage other than that of subsidence and that previous local applications are no contraindication to irradiation. The case must be followed closely so that the progress gained by aggressive treatment shall not be lost by too long an interval between treatments. Erysipelas is very energetic at times and gains new vigor when therapy is withheld after having been regularly administered. Each new onslaught is more difficult to discourage. The patient's condition is not considered a contraindication to routine irradiation at any time.

Furuncles and carbuncles are advantageously treated at any stage of development; surgical drainage should not be omitted at the proper time. Early irradiation may result in abortion of the process while delayed treatment usually hastens its natural evolution calling for surgical interference sooner than was planned. In any event the pain is diminished or controlled.

Parotitis² in the acute, subacute or chronic stage with or without a draining sinus, is reported to be best treated by irradiation. Good results are obtained without resort to surgery, and post-operative complications are avoided.

Benign cervical adenitis, ranging from the acute type associated with upper respiratory infection to the chronic type of tuberculous etiology, responds to roentgen irradiation, which is now to be preferred in the latter type because the results are better than those following surgical interference. Pfahler³ has said, "The application of roentgen irradiation in benign inflammatory enlargements of the cervical glands has no contraindications or complications in the hands of an experienced radiotherapist."

Acute sinusitis and acute mastoiditis with first degree involvement are very annoying at times because of the associated pain but this is usually

satisfactorily controlled by irradiation with relief from pain a few hours following therapy. Early treatment may also favorably influence the subsequent course of the disease. The pain may be mitigated during any stage of involvement of sinusitis or mastoiditis.

Upper respiratory infections in the acute stage have been reported to respond nicely in some cases. The peritracheal and peribronchial lymph node involvement, which often follows such infections and results in slow recoveries with concomitant coughs of a very annoying nature, has been treated successfully by this method.

Many other inflammatory diseases have responded very satisfactorily to adequate therapy and deserve to be subjected to this agent more often, either alone or in conjunction with other accepted forms of treatment. To prevent repetition and avoid being monotonous, I shall enumerate other conditions which have been found to respond favorably to roentgen irradiation: cellulitis, granulomas, infected angiomas, certain cases of osteomyelitis, fistulous tracts, actinomycosis, blastomycosis, Mikulicz's disease, tuberculous peritonitis, pelvic inflammatory diseases, paronychia, and in delayed resolution of pneumonia before abscess formation or empyema has occurred.

To conclude, roentgen irradiation has assumed a definite place in the treatment of certain infections and offers an improvement over older well recognized methods. Its analgesic effect is invaluable and when administered by a competent therapist, it has no contraindications.

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Discussion

Dr. Ruben Nomland, Iowa City: X-ray therapy is most useful in a great many dermatologic conditions and it is especially valuable in the inflammatory conditions to which Dr. Earl has referred. Furuncles, carbuncles and other staphylococcus infections are frequently aborted or have their duration shortened by x-ray treatment. Streptococcus infections of the nature of erysipelas and cellulitis are also favorably influenced by small amounts of x-ray. In the chronic granulomas such as blastomycosis, tuberculosis and actinomycosis, x-ray treatment is of great benefit. Undoubtedly the other conditions mentioned by the essayist are also helped by x-ray treatment, but I have not had experience with them. It is my observation that if the dose of x-ray is kept within the bounds mentioned there will be no damage to the skin.

A RESUMÉ OF SULFANILAMIDE

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Sulfanilamide is the name given by the Council on Pharmacy and Chemistry of the American Medical Association to the chemical compound para-aminobenzene-sulfonamide.¹ This drug is also marketed under the trade names of prontosil, prontosil, stramid, streptocide, calsulanyde, sulfamidyl and sulfonamid P.

Sulfanilamide is not a new drug because it formed the radical of a dye which was tested therapeutically about twenty years ago and then discarded. However, at that time its specificity against streptococci was not tested. In February of 1935, Domagk in Germany reported the use of a dye, the active radical of which was prontosil, as an effective chemotherapeutic agent in streptococcic anginas, erysipelas and septic abortion. The French soon corroborated the observations of Domagk. Early in 1936 Colebrook and Kenny in England confirmed the results reported by both the German and French, using a series of puerperal sepsis cases. Long and Bliss of Johns Hopkins University in Baltimore began studying the drug and recording their experiences. Their published observations upon all phases of this drug are the most comprehensive in the English language. Much of that which follows was culled from their writings.

According to Erlich an effective chemotherapeutic agent must meet two fundamental requirements; the drug must possess an affinity for, and a consequent toxic effect upon, the protoplasm of the parasite, and at the same time not have any deleterious effect upon the host. The three drugs most nearly meeting these specifications are arsenic, quinine, and sulfanilamide.

Much experimental work has been done to ascertain from a biochemical standpoint, how the drug accomplishes its results. These experiments have been conducted upon organisms in various culture media outside a living body. Mice, rabbits, and monkeys have been infected with various strains of streptococci of known virulence. The following is the present conception of the mode of action of sulfanilamide; first, it does not possess any bactericidal power upon any organisms present; second, it does not stimulate phagocytosis; third, it does not affect the capsule of encapsulated organisms; fourth, it does not affect the virulence of any organism; and fifth, its action is to inhibit the multiplication of susceptible organisms, which effect is termed bacteriostasis. The following organisms are considered to be inhibited by this drug.

1. It is specific only for beta hemolytic streptococcus.
 2. Streptococcus viridans possibly may be inhibited to a limited degree.
 3. Pneumococcus types I, II and III are likewise affected to some extent.
 4. In meningococcic meningitis it is more effective than meningococcus antiserum. In 52 cases of meningococcic meningitis treated with prontosil the mortality rate was fifteen per cent, while in those cases treated with the antiserum the mortality rate was thirty per cent.
 5. Its effectiveness in urethritis, vaginitis, prostatitis, arthritis, and ophthalmia is about fifty per cent in the reported cases.
 6. It is worth a trial in Bacillus Welchii gas gangrene.
 7. Occasionally it does not benefit a hemolytic streptococcic infection and the reason is not known.
 8. Several observers have reported benefits in pyelitis caused by the colon bacillus and staphylococci.
- The use of sulfanilamide is indicated in the following disease processes which are considered to have a streptococcic etiology. It is indicated in streptococcic tonsillitis and pharyngitis, but due to the usual short clinical course of these infections the results have not been striking. However, the blood stream is rendered sterile which decreases the complications, since a bacteremia undoubtedly exists in all of these cases in some stage of the disease. Pharyngomaxillary fossa cellulitis, Ludwig's angina, acute suppurative streptococcic otitis media, septic phlebitis, streptococcic septicemia, acute rheumatic fever, acute endocarditis, puerperal or postabortion sepsis, scarlet fever, erysipelas, acute osteomyelitis, and gonococcic infections are all indications for the use of this drug. After a surgical mastoiditis has developed it is useless to use sulfanilamide. In erysipelas, particularly in the newborn where the mortality rate is very high, sulfanilamide stops the progress of the lesion, but the eruption already developed heals only with the usual speed of resolution. In a streptococcic septicemia the blood stream will become sterile in twenty-four to forty-eight hours and the tendency toward metastatic foci is reduced. In peritonsillar abscess, if effective therapy is induced before fluctuation, the process retrogresses. In scarlet fever, prontosil therapy results in a subsidence of the fever, and the complications, such as otitis, mastoiditis, adenitis, and nephritis are materially reduced. In Baltimore in a series of twenty-three cases of streptococcic meningitis, nineteen cases recovered. This series represents the most spec-

tacular results of this drug. In osteomyelitis clinical observation has taught that the drug must be continued for at least two weeks after an apparent resolution; otherwise relapses are frequent. An important point to remember is that this drug does not possess any antitoxic properties; therefore, it does not replace streptococcic antitoxin. Although it causes a recession of the fever, the toxic symptoms other than fever still persist and the usual methods of combating toxemia must be employed.

Although sulfanilamide is considered relatively safe, there are definite contraindications. First, it should not be administered with coal tar derivatives or saline laxatives, such as magnesium sulphate, because there is a likelihood of producing a sulfhemoglobinemia or methemoglobinemia; second, in the presence of an impaired renal function it must be administered with caution and the dose determined by the blood concentration, it being advisable not to permit it to exceed fifteen to twenty milligrams per cent; and third, if an anemia exists great care should be exercised because the benzene radical of the drug may damage the hematopoietic system. Since the drug is excreted one hundred per cent through the kidneys with water the most effective antidote is the forcing of large amounts of water.

The drug can be administered orally, intramuscularly, and subcutaneously. Sulfanilamide proper is very insoluble, an eight-tenths of one per cent in normal saline being a saturated solution; therefore it is dispensed in tablet form for oral administration only. The form *prontosil* is for subcutaneous or intramuscular use. Sulfanilamide, not *prontosil*, can be used intrathecally in the form of an eight-tenths of one per cent solution, with normal saline as the vehicle. In the administration the objective to be accomplished is to produce and maintain a therapeutically effective concentration in the tissues. It has been determined that a blood concentration of six milligrams per 100 cubic centimeters is adequate in mild infections, and ten to fifteen milligrams per 100 cubic centimeters in severe infections. The blood concentration may be computed by the method of Marshall.² It has been ascertained that the drug reaches its maximum concentration in the blood four hours after its administration by either of the three routes mentioned. As previously stated it is excreted 100 per cent unchanged through the kidneys and there is no evidence that it becomes accumulated in any organ or cell group. Several days are required to establish equilibrium between intake and out-put, but when established, 100 per cent of the intake of the drug can be recovered in the urine. After

discontinuance of the drug about three days are required to obtain total elimination with a normal renal function. It is noteworthy that drug concentration in the cerebrospinal fluid is only slightly lower than that in the blood, and is attained at practically the same time. An important observation is that the maximum bacteriostatic effect is reached about forty-eight hours after the effective therapeutic blood concentration is attained.

The dosage is the same for all diseases, except that when life is threatened, as in septicemia or meningitis, the usual daily dose is doubled. Oral administration is considered the most efficacious because it allows doses to be given at four hour intervals, a requirement to maintain a constant blood and tissue concentration. It is recommended that the total twenty-four hour dose be given as the first dose to be followed at four hour intervals with the fractional twenty-four hour dose. To prevent an acidosis, which this drug tends to produce, it is recommended to administer one grain of sodium bicarbonate with each grain of sulfanilamide. However, the dosage of sodium bicarbonate should not exceed ten grains at any one administration. The following table represents the accepted standard dosage, which is approximately fifteen grains per twenty pounds of body weight each twenty-four hours.

ORAL DOSE PER TWENTY-FOUR HOURS

	Mild infections	Severe infections
Infants up to 40 lbs.	15 to 25 grs.	30 to 50 grs.
Children 40 to 80 lbs.	35 to 45 grs.	70 to 90 grs.
Older children 80 to 120 lbs.	50 to 60 grs.	100 to 120 grs.
Adults	60 to 80 grs.	120 to 160 grs.

Clinical observation has shown that the amount of drug per kilogram of body weight required to maintain a blood concentration of ten milligrams per cent is .15 gram per kilogram in an infant compared to one-tenth gram per kilogram in an adult; therefore, the higher dosage in proportion to weight is in the infant. With children who will not swallow a tablet it may be crushed into a powder and spread upon bread mixed with jelly or sugar. Large amounts of citrus fruit juices or glucose will counteract the tendency toward an acidosis. The dosage of *prontosil* subcutaneously or intramuscularly is one and one-half cubic centimeters per pound of body weight per twenty-four hours, administered hypodermically at six to four hour intervals. However, it is not without a moderate amount of discomfort at the point of injection. It is preferable to administer it by hypodermoclysis using Hartmann's solution as the vehicle and repeating at eight hour intervals.

As a general rule the proper time to stop the administration of sulfanilamide is when the patient has been symptomless for two or three days; for instance, in septicemia and meningitis, when the cultures have been negative for three successive days. As previously mentioned, in osteomyelitis, dosage should be continued for two weeks after apparent resolution to prevent relapses. About three days are required to free the body completely of the drug.

Numerous toxic effects have been recorded as being due to this drug, but to date the total experience is insufficient to evaluate justly their significance. Prontosil has one distinct advantage in that its only toxic effect is the production of fever. It does cause the skin to become pink and the urine red, but it gives rise to no kidney irritation. Sulfanilamide on the other hand produces numerous definite clinical toxic effects which are less evident when the patient is in bed than when he is in an ambulatory state. These so-called toxic symptoms usually become manifest four to six hours after ingestion and consist of one or more of the following: dizziness, headache, anorexia, nausea, mental dulness, light headedness, muscular weakness, sweating, tinnitus, and mild parathesias. Cyanosis associated with rapid breathing due to a decreased carbon dioxide combining power of the blood develops in fifty to ninety per cent of the cases. One should look for a methemoglobinemia or sulfhemoglobinemia, and if neither exists the cyanosis may be disregarded. A rash, similar to measles, develops in some cases on the tenth to fourteenth day of the administration of the drug. It is believed that the drug has vascular toxic properties for some individuals. The onset of the rash is usually accompanied by fever and general malaise. The rash fades when the drug is discontinued. Although it is an indication to stop the drug, if the patient is very ill it has been continued with no untoward results. Individuals who develop a rash should be kept out of the sun, because some of them become photosensitive.

Fever, which is frequently associated with the administration of prontosil, is also encountered with sulfanilamide. In one series of 134 cases, fever occurred in twenty-one. It usually appears between the seventh and tenth day, but does occur as early as the fourth and as late as the thirteenth day. This drug fever simulates serum sickness and is associated with general malaise, nausea, itching, and tinnitus, but does not have an associated arthritis. Fever and all other effects subside in from two to four days after the drug is stopped. Ordinarily if fever occurs the drug should be discontinued, but if its use is indicated

it may be continued and the fever ignored, without any untoward results having been reported. An acidosis is not uncommon unless previously outlined means are employed to prevent it. Hemolytic anemia is a rare but grave toxic effect and may develop very rapidly; that is, in two or three days. Therefore, a red blood count should be made every two or three days. However, the blood destruction ceases with the stopping of the drug. In a severely ill patient it is advisable to continue with the drug and replace the red blood cells by means of transfusions. Agranulocytosis has occurred in instances where the drug has been used over a period of several weeks. A few of these patients died and a few recovered after the drug was discontinued. Therefore, a white blood count should be made every few days. A progressive lowering of the white blood count is one of the most important criteria demanding discontinuance of the drug. Jaundice associated with impaired liver function has been observed. Toxic optic neuritis is reported to have occurred several times, once as early as the third day. It underwent resolution within one week after the drug was stopped. Allergic phenomena consisting of urticaria, sneezing, itching, and asthmatic symptoms have occurred and have been corroborated by the patch test.

As a prophylactic agent the drug is advocated in streptococcic and meningococcic epidemics. The prophylactic dose for a child is one five grain tablet every eight hours and for an adolescent, twice that dosage.

SUMMARY

1. The drug sulfanilamide possesses a bacteriostatic effect, particularly for Beta hemolytic streptococci, but is also effective against meningococci and gonococci.
2. The drug does not possess any antitoxic properties.
3. The most advantageous mode of administration is by mouth, but it may be used intravenously or intrathecally. Prontosil is best given subcutaneously in Hartmann's solution.
4. It is necessary to take precautions to prevent the drug producing an acidosis.
5. The drug is not without toxic manifestations.
6. Routine blood counts are essential during the administration of this drug.

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HYPERTROPHIC PYLORIC STENOSIS
IN ADULTS

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Hypertrophy of the pyloric muscle with stenosis, occurs commonly in infancy, but it is rarely considered the cause of obstruction or gastric retention in the adult. Recently, cases have been described more frequently, and now it is occasionally recognized by clinical and roentgenologic examination.

The cases described have had varying degrees of obstruction, ranging from periodic distress to increasing gastric retention and vomiting. High grade obstruction has been comparatively rare. In some, it was associated with either gastric or duodenal ulcer. In many instances, the possibility of a healed gastric ulcer could not be positively excluded. Under the classification of primary hypertrophic pyloric stenosis, these could not be included; but from a practical standpoint, there is little difference. Prolonged or repeated pylorospasm may precede or accompany hypertrophy, but should not be confused with it.

The symptoms aid little in the diagnosis. They may resemble those of duodenal ulcer or of pyloric carcinoma. Vomiting is the most constant symptom. The tumor of the pylorus produced by the hypertrophy is rarely palpable. Kirklin and Harris¹ have described a radiologic appearance, which, when present, is characteristic. The base of the duodenal bulb is unusually concave. This concavity is probably produced by the partial invagination of the hypertrophied pylorus. The pyloric narrowing is not perfectly symmetrical, but near its middle, and on its lower border, is a depression or semilunar defect.

CASE REPORTS

Case 1. A man, fifty-five years of age, had been complaining of gastric distress and fullness for three months. He had had no previous stomach trouble, although he drank alcohol periodically. This distress was aggravated by taking food. He started vomiting three weeks before examination. A greater part of the food ingested was not retained. He had lost about fifteen pounds in weight. The physical examination revealed nothing striking, except that he was dehydrated, undernourished, and he appeared quite ill. Food and water were withheld for twelve hours before x-ray examination. Under the fluoroscope, the barium mixed with a moderate amount of retained stomach contents, and a fairly large gastric outline was obtained with only a few swallows. The pyloric end of the stomach was diffusely contracted, although mov-

able. The duodenal bulb appeared normal; its base was not unusually concave, although perhaps it was not visualized perfectly because it filled with difficulty. The pyloric narrowing had a slight depression on its inferior surface toward the duodenal end, but this was considered an evidence of irregular infiltration of the gastric wall. A diagnosis of pyloric carcinoma was made.

Gastro-enterostomy was performed for relief. The pylorus was smooth, and the surgeon expressed the opinion that the obstruction was due to a small gastric ulcer. He improved for a few



Fig. 1. Obstructive pyloric hypertrophy

weeks, but then started vomiting again. This continued to a variable degree for several months, and he died five months after the operation. At autopsy, the pylorus was found to be firm and concentrically contracted. The peritoneum was smooth and not adherent to any surrounding tissue. A probe was the largest instrument which could be passed through, and the lumen measured approximately three millimeters in diameter. On opening longitudinally, the wall was thickened for about one inch. The thickened elliptical muscular layer was clearly outlined between the serosa and mucosa. There was no evidence of ulceration or scarring in the pylorus, nor in the duodenum and stomach proximal to the pylorus. Microscopic examination revealed that the thickening consisted solely of muscular tissue. Why the gastro-enterostomy failed to function satisfactorily could not be explained. The stoma was about two and one-half centimeters in diameter and seemed adequate. The proximal loop was comparatively long.

Case 2. A man sixty-two years of age had had some gastric distress after meals for at least ten years. This had increased slightly. It was never severe, and his weight was maintained. X-ray examination revealed diffuse narrowing of



Fig. 2. Pyloric hypertrophy with moderate retention.

the pylorus. The base of the duodenum was cupped. About one-fourth of the barium was retained five hours after the meal. A diagnosis of pyloric hypertrophy was made. A follow-up x-ray one year later showed no change, although the retention had increased slightly. His symp-



Fig. 3. Moderate pyloric hypertrophy without obstruction or retention.

toms have persisted, but he is comparatively comfortable and not worried about his condition.

Case 3. This case shows only moderate pyloric narrowing, but it was more persistent than the usual pylorospasm. It is included as a case of

pyloric hypertrophy so that the different degrees or phases might be illustrated. The patient was a woman seventy-three years of age who had had periodic distress for forty years. The discomfort would begin several hours after a meal, and was fairly well relieved by soda. While she was having occasional distress at the time of examination, it was not more severe than previous attacks had been. The stomach emptied rapidly and there was no suggestion of retention.

CONCLUSION

Hypertrophic pyloric stenosis with a moderate degree of obstruction is probably more common than it is generally believed to be, and it can be recognized radiologically.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

HEMATOLOGIC STUDIES IN LIVER DISEASE*

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Since the work of Minot and Murphy¹ in 1926 the effect of liver and liver extracts in the treatment of pernicious anemia has tended to focus our attention on the liver in its relationship to hematopoiesis. Naegeli² in 1912 made the observation that "certain cases of hepatic cirrhosis show a high value of hemoglobin and a macrocytosis." Gamna³ reported two cases of pigmentary cirrhosis in 1926 in which he pointed out the tendency of the color index to increase above unity, and an "anisomacrocytosis so marked as to call to mind the blood picture of pernicious anemia." It has been shown by Van Duyn⁴ that cirrhosis of the liver is accompanied by a macrocytic type of anemia which may at times be confused with pernicious anemia. He suggests that this macrocytosis in the presence of free gastric hydrochloric acid should suggest liver disease. A further study of hematopoiesis in the presence of liver disease was therefore undertaken.

SUBJECTS

All patients with cirrhosis of the liver admitted to the University Hospital during the past year were studied, and while the number was not large the results are uniformly constant. Eight of the ten patients had luetic and portal cirrhosis. The

* From the Department of Neurology.

cirrhosis in one resulted from long standing passive congestion, while one probably represented Banti's syndrome rather than the ordinary type of cirrhosis.

METHOD

Measurements of individual red blood cells were done in all cases by means of an eyepiece micrometer disc following the technic outlined by Grosh and Stifel.⁵ The disc was accurately calibrated and the average cell diameter was determined by the measurement of 100 cells. Hemoglobin determinations were done by the Newcomer method, employing a glass disc standard which had been accurately standardized against van Slyke determinations. Hematocrit and volumetric platelet determinations were made by the methods of Van Allen. In addition, the bleeding time, coagulation time, erythrocyte fragility, constrictor test, clot retractility, fibrinogen content of the plasma, and reticulocyte percentage were determined. The reticulocyte percentage was estimated by counting the number among 500 erythrocytes in a smear strained with brilliant cresyl blue.

RESULTS

The results of these procedures for each case appear in the accompanying table. The average diameter of the erythrocytes in each case was found to be consistently above the normal of 7.72 microns established by Price-Jones⁶ and ranged from 7.91 to 8.55 microns. All but one patient had an average cell diameter above 8.0 microns, while the average for the entire group was 8.34.

The hemoglobin content ranged from 2.99 to 13.60 grams per 100 cubic centimeters of blood, or 21 to 86 per cent of normal. The percentage values were based upon the normal values established by Osgood, which are 15.8 grams of hemoglobin per 100 cubic centimeters of blood for the adult male and 13.7 grams for the adult female.

Although the cells were uniformly larger than normal, this was more than compensated for by the lowered hemoglobin so that, contrary to the findings of Van Duyn⁴, the color index was uniformly low. The volume index approximated or exceeded unity in all patients except number six.

The platelet percentages were definitely lowered in five patients, whereas in the remaining five they were within the normal limits of 0.40 to 0.60 per cent. Three of the five patients with low numbers of platelets had nonretractile clots but only one of these had the other manifestations of hemorrhagic purpura; that is, a prolonged bleeding time and a positive constrictor test. It is well recognized that liver disease may be complicated by hemorrhagic purpura and these patients illustrate the frequency with which the number of platelets is quantitatively diminished. Aside from those patients presenting lowered platelet determinations, the constrictor test, bleeding time, and coagulation time were normal and there was good clot retractility. It has previously been demonstrated by Tocantins⁷ that the platelets influence syneresis but that they are not the only functioning factor in this phenomenon. In this group of patients the syneresis of the blood clot was more closely correlated to the number

PATIENT	1	2	3	4	5	6	7	8	9	10
Diagnosis	Passive Congestion	Luetic Cirrhosis	Portal Cirrhosis	Banti's Syn- drome	Portal Cirrhosis	Luetic Cirrhosis	Luetic Cirrhosis	Portal Cirrhosis	Portal Cirrhosis	Luetic Cirrhosis
Constrictor test.....	Pos.	Neg.	Pos.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Bleeding time.....	3.0	3.0	6.75	3.0	3.0	6.0	3.25	4.0	4.0	5.5
Coagulation time.....	4.75	5.0	6.0	6.50	4.0	4.50	5.0	5.50	5.0	5.0
Fragility of Erythrocytes*.....	.46-.34	.44-.28	.44-.32	.42-.34	.42-.30	.44-.30	.44-.28	.44-.34	.42-.32	.44-.34
Clot retractility.....	Good	Good	None	Good	Good	None	None	Good	Good	Good
Reticulocytes, per cent.....	3.0	0.8	1.2	0.6	1.4	0.8	1.6	1.0	1.2	0.2
Fibrinogen Grams per 100 cc.....	0.391	0.412	0.409	0.406	0.495	0.313	0.381	0.481	0.385	0.367
Platelets, per cent.....	0.53	0.63	0.25	0.15	0.25	0.35	0.22	0.43	0.55	0.36
Erythrocyte diameter, microns.....	8.374	8.552	8.432	8.095	8.172	8.376	8.227	8.301	8.423	8.400
Hematocrit { Volume.....	38.0	32.0	43.0	36.0	16.1	16.0	50.0	37.0	25.0	38.0
{ % of normal.....	84.4	71.1	95.5	80.0	35.7	39.02	111.1	82.22	62.14	84.44
Hemoglobin { Grams.....	9.62	7.89	12.91	10.52	4.24	2.99	13.61	10.73	4.975	9.17
{ % of normal.....	60.88	49.93	81.70	66.58	26.83	21.82	86.13	61.58	36.31	58.04
Erythrocytes { Millions.....	4.66	3.55	5.20	3.65	1.79	2.90	4.00	2.80	2.45	4.87
{ % of normal.....	86.29	65.73	96.29	67.59	33.14	60.41	74.07	51.85	51.04	90.18
Color Index.....	0.705	0.752	0.849	0.985	0.809	0.361	1.160	1.180	0.711	0.640
Volume Index.....	0.980	1.08	0.993	1.182	1.07	0.647	1.500	1.58	1.21	0.93
Saturation Index.....	0.721	0.702	0.855	0.832	0.750	0.559	0.775	0.748	0.584	0.687

*Percentage salt solutions at which hemolysis began and was complete

of platelets than to the fibrinogen content of the blood plasma. The fibrinogen varied from 0.313 to 0.495 grams per 100 cubic centimeters of plasma, all of which were considered as low normal values. In no case was the fibrinogen value markedly lowered and in no case did it mount above the accepted normal values. It has been demonstrated through animal experimentation that liver damage diminishes the total protein content of blood plasma as well as the fibrinogen. The fibrinogen values of these patients are in keeping with the experimental work, as well as previous clinical reports. As was previously pointed out, the degree of clot retractility was not influenced by minor changes in the blood fibrinogen values.

The reticulocyte percentage was normal or increased in all patients, and in patients one, three, five, seven, eight and nine was markedly elevated when it is considered that these determinations were made before any form of therapy was instituted. Such values suggest that there is no aplasia of the bone marrow associated with liver disease to account for the concomitant anemia.

The fragility of the erythrocytes was within normal limits in each case indicating that the cells are not being destroyed because of an increased fragility. It also indicates that bilirubinemia is not present to the extent that it renders them more stable.

DISCUSSION

These results are in accord with those of Van Duyn who found a macrocytic type of anemia associated with cirrhosis of the liver in three patients⁴. While the present series is not large, the findings in respect to the cell diameters are constant, and show the average cell diameter to be uniformly greater than normal. Contrary to the early observations of Gamna³ these patients presented uniformly low color indices. The saturation index was below unity in every case and the volume index approximated unity. These hematologic studies showed that in addition to large cell diameters the erythrocytes had a normal fragility so that the accompanying anemia was not explainable on this basis. The number of reticulocytes present suggested that the bone marrow was not aplastic and carried on its hematopoietic function at a rate compatible with the degree of anemia present. The seat of fibrinogen formation is theoretically in the liver and one might therefore expect a lowered blood fibrinogen in the presence of liver disease. These studies show results which are consistently low, but demonstrate that the liver damage of this extent does not depress the fibrinogen content of

the blood to dangerously low levels and not enough to affect syneresis. There is no correlation between the effect of liver damage on cell diameter, and the effect on either the platelets or blood fibrinogen. Although the number of platelets tended to be diminished, this reduction was not always associated with changes in the bleeding time, constrictor test, or clot syneresis so that the contention is supported that a diminished number of platelets is not the entire explanation for thrombocytopenic purpura. The etiology of the liver disease, whether luetic, alcoholic, or from long standing congestion, did not appreciably affect the erythrocyte diameter, reticulocyte percentage, platelet count, or blood fibrinogen value.

CONCLUSIONS

1. Cirrhosis of the liver is associated with an increase in the average diameter of the erythrocytes.
2. Cirrhosis causes a lowered value of the blood fibrinogen and a tendency toward a reduction in the number of platelets.
3. The degree of anemia in patients with liver damage cannot be explained on the basis of increased fragility of the erythrocytes nor on an aplasia of the bone marrow.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CARCINOMA OF THE PROSTATE GLAND

D. F. WARD, M.D., Dubuque

The cure of cancer of the prostate gland depends upon early detection and radical excision. While rarely the diagnosis may be difficult, in general it can be made by digital examination of the prostate gland. The case to be described is of interest because it illustrates this very point; and also because the clinical picture is typical of this not uncommon form of malignancy.

CASE REPORT

The patient, a white man, sixty-eight years of age, was first seen at his home November 17, 1937, when his chief complaints were "difficulty in urination and pain over the bladder."

Family history: His wife and three children were well; there had been no deaths.

Past history: The patient stated that he had always been well until his present illness began. Specific questions in regard to the respiratory, circulatory, digestive and nervous systems elicited nothing of clinical significance. He had never passed blood, pus, or calculi in the urine. He had never had a venereal disease.

Present illness: About ten months before the patient was seen, he had begun to have difficulty in urination. He had to get up several times each night, had difficulty in starting urination, passed small amounts of urine but felt that his bladder was not completely emptied. Later he developed pain or discomfort over the bladder region and this caused him to seek medical advice. About four months before we saw him he was examined by another physician and the prostate gland was found to be hard. A transurethral resection was done. Microscopic examination of the tissue removed showed no malignancy although this was considered probable by the urologist. After the operation he received temporary relief but the symptoms gradually returned. He had formerly weighed 220 pounds; at that time he weighed 210 pounds. However, he believed that he had lost one-fourth of his strength.

Physical examination: The patient was admitted to the Finley Hospital, November 19, 1937, and the following is the hospital record of the physical examination. "The patient is a well developed and well nourished white man who is somewhat pale and apathetic. The eyes, ears and nose show no positive pathology. The tongue is thick, leathery and crusted with dark material. The mucous membranes are pale. Many teeth are lacking; a few snags remain and the buccal hygiene is poor. The breath has a uriniferous odor. The thyroid gland is not enlarged. The cervical lymph nodes are barely palpable. There is a small hard nodule the size of a hazel nut in the left supraclavicular space; it is not tender.

"The chest is symmetrical and expansion is good and equal on each side. The lungs are negative to percussion, but a few scattered moist râles are heard posteriorly over each. On percussion the heart is slightly enlarged to the left and downward. On auscultation there are no murmurs or thrills and the beat is regular in rate, rhythm and force. The abdomen is globoid and tympanitic. The bladder is enlarged and extends well up

toward the umbilicus. Slight pressure over this area causes pain and a desire to urinate. No other masses are felt in his abdomen. There is no pathology in the genital organs. The sphincter tone is good. The prostate gland is estimated to be about three times the normal size. The lateral lobes seem to be separated by a harder posterior lobe. A lobulated, firm mass can be felt extending backward toward the rectum, but the latter is not involved. The patient complains somewhat of vague pains about the pelvis and back of each thigh, but no reason can be discovered to account for it."

X-ray examination: The films of the pelvis showed marked hypertrophic arthritis of the lower lumbar spine and about the right hip joint with obliteration of each sacro-iliac joint. The appearance was consistent with an osteitis of the ileum and sacrum with bilateral sacro-iliac arthritis. Another possibility for this appearance was diffuse osteoblastic, carcinomatous metastases.

Laboratory examinations: The white blood count was 18,400; the red blood count, 3,800,000; and the hemoglobin, 75 per cent. The urine showed one-half gram of albumin per liter, and numerous leukocytes and erythrocytes. Chemical examination of the blood: urea nitrogen, 30 milligrams per 100 cubic centimeters; total non-protein nitrogen, 57 milligrams per 100 cubic centimeters.

A provisional clinical diagnosis was made of carcinoma of the prostate gland with pelvis lymph node metastases and probably metastases to the bones of the pelvis. For about six weeks the patient improved considerably with irrigations of the bladder, rest and general care. He then complained of sharp pains down each thigh and had repeated attacks of hematuria. The pain was controlled temporarily by mild sedatives, but later required narcotics. About ten days before death the protein waste products of the blood increased and the patient became drowsy. A week before death the signs of bronchopneumonia developed. Death occurred approximately one year after the onset of the symptoms. The final clinical diagnosis was carcinoma of the prostate gland with metastases to the pelvic lymph nodes and bones; uremia and bronchopneumonia.

Autopsy: The important findings at autopsy were in the lungs and the genito-urinary system. The former showed bronchopneumonia on the right side. The prostate gland was hard and moderately enlarged. The pelvic and retroperitoneal lymph nodes were greatly enlarged and formed a chain of metastases up to the level of the renal arteries. (Figs. 1 and 2) Other metastases were found in the mesenteric lymph nodes.

iliopsoas muscle, sacrum and lumbar vertebrae and in the third rib. The neoplasm had also invaded the floor of the urinary bladder. Each ureter was partly obstructed by metastases in the surrounding tissues. There was a moderate hydronephrosis of the right ureter, while on the left the dilated renal pelvis contained pus. The left kidney showed numerous small abscesses

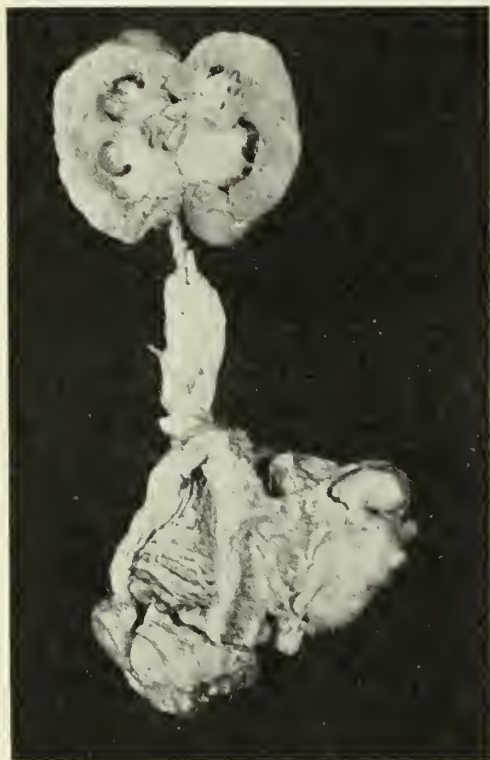


Fig. 1. Carcinoma of the prostate gland; metastases behind the urinary bladder and along the left ureter; hydronephrosis.

through the parenchyma. Microscopic sections of the prostate gland and various metastases showed a highly malignant neoplasm composed of rather small cells rich in chromatin and with numerous mitotic figures. The anatomic diagnosis was as follows:

1. Carcinoma of the prostate gland; invasion of the urinary bladder; metastases to the pelvic, retroperitoneal and mesenteric lymph nodes; iliopsoas muscle, sacrum, lumbar vertebrae and third rib.
2. Bilateral obstruction of the ureters; right hydronephrosis, left pyonephritis with multiple abscesses.
3. Bronchopneumonia.

Comment: This case has several interesting features. First, the history of difficulty in urination and frequency, particularly night frequency, noticed several months before the patient sought medical attention, is very common in prostatic

cancer. While not necessarily due to cancer, it is imperative in a man over fifty years of age, to make an exact diagnosis of the underlying cause. The possibility of cancer should always be considered first in this class of patients. The same is true of painful urination which also occurred in this case. Early, pain is usually localized in the bladder or penis and is the result of obstruction to the flow of urine. Later, and due to involvement of the pelvic nerves or bones, it may be referred to the pelvis, sacrum, spine or to the buttocks and down the thighs. Sciatic pain in an elderly man should always lead to the suspicion of cancer of the prostate gland. The second important feature is the fact that malignancy was suspected on digital examination of the prostate gland, but the clinicians were led astray when a biopsy specimen removed by the trans-



Fig. 2. Retroperitoneal lymph node metastases along the abdominal aorta.

urethral resection was reported as benign. This possibility should always be considered and an exact diagnosis would probably have been made if the gland had been exposed by perineal incision. Finally, from a pathologic standpoint, the case is of interest because of the extensive metastases found at autopsy, although the prostate gland itself was not greatly enlarged.

DISCUSSION

Contrary to the usual belief, cancer of the prostate gland is relatively common. Some statisticians give an incidence as high as 25 per cent of men over forty-five years of age. Thus Moore in an intensive investigation of postmortem material reported that 21 per cent of patients over forty-five years of age had cancer of the prostate gland. This figure in collaboration with other statistics indicates that the disease is frequently missed by both clinicians and pathologists either because the growth is too small or because only gross examination of the gland is made at autopsy. It is generally believed that in about one out of five patients with enlarged prostate glands, the enlargement is due to cancer. In our series of 500 autopsies, malignant tumors were found in 116 instances. Four of them (3.4 per cent) were primary in the prostate gland.

Cancer in this location occurs after forty years of age, and the highest incidence is between sixty and seventy years of age.

Like cancer in general, the etiology aside from age is not known. While it may be associated with benign hypertrophy there is no proof that the cancer results from the hyperplasia of the glandular structures. In other words, it is generally believed that the etiology is different for each condition.

The majority of carcinomas of the prostate gland arise in the median or posterior lobe. The growth may extend along the prostatic ducts and involve the lateral lobes. It may force the floor of the bladder upward, but actual invasion of the mucosa is usually a late occurrence. Further extension occurs along the seminal vesicles and between the perineal tissues. Metastases to the pelvic bones, vertebrae or femurs and to the pelvic and retroperitoneal lymph nodes are common.

In the vast majority of cases, a diagnosis can be made by detecting induration of the prostate gland by rectal examination. The gland is definitely hard and has an incompressible feeling entirely different from the firmness encountered in prostatic tuberculosis or chronic prostatitis. In most cases cancer arises in the posterior lobe but it may arise in the lateral lobes. It may or may not be associated with benign hypertrophy. Rarely the diagnosis may be aided by cystoscopic examination or it may be necessary to expose the gland for biopsy.

Early cancer of the prostate gland is curable by radical operation. This includes the block removal of the entire gland, a cuff of the bladder and the seminal vesicles. In later cases only

palliative measures can be offered and subtotal prostatectomy or removal of obstructing tissue by electrosurgery or transurethral resection may be required. Radium or deep x-ray therapy is also of great value as an adjunct to palliative surgery. Roentgen ray therapy is also used to relieve pain in bone metastases.

In cases suitable for radical operation, between 50 and 75 per cent five year survivals have been reported by experienced urologists. In late cases the prognosis is more dubious, but life may be made more comfortable or prolonged by palliative surgery supplemented by radium or x-ray therapy. To improve the prognosis every effort should be made to detect the cancer in its earliest stages. This demands that digital examination of the prostate gland should be a part of the physical examination of every man over forty years of age.

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A NEW CANCER INSTITUTE

Announcement has just been received of the opening on March 21, of an institute in Chicago, designed especially "to conduct research on the causes, diagnosis and treatment of cancer, to instruct and assist physicians, surgeons, clinics and hospitals in the diagnosis and treatment of cancer, and to train cancer specialists." Two unique features of the institute are first, the assembling of a group of leading cancer authorities from various medical centers to collaborate in the study of the cancer problem; and second, the formation of an organization devoted exclusively to the study of cancer.

Although the scope of the activities of the Chicago Tumor Institute will be both national and international, the contributions to the funds of the institute have been made entirely by citizens of Chicago. One of the important functions of the institute is to train physicians and surgeons desiring to specialize in the diagnosis and treatment of cancer. Approximately two hundred physicians from all parts of the United States, Canada, South America, Mexico and the Hawaiian Islands, have already applied for courses of instruction in the institute.

The board of trustees of the organization presents a formidable array of talent. Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases, and executive director of the National Cancer Council, is president of the board. Dr. Arthur H. Compton, professor of physics in the University of Chicago, is vice president. Also on the board is Dr. Max Cutler, associate in surgery in the Northwestern University Medical School. Dr. Cutler holds the position as director of the scientific committee which will direct activities of the institute.

STATE DEPARTMENT OF HEALTH

Walter L. Bierring

MEETING OF THE IOWA PUBLIC HEALTH ASSOCIATION

The Twelfth Annual Meeting of the Iowa Public Health Association will be held May 10, 1938, at Hotel Fort Des Moines, Des Moines.

This year's program will include a symposium on pneumonia with emphasis on early recognition of the disease by the Neufeld method and upon administration of curative antipneumococcic serum. Invitation will be extended to those in charge of hospitals and laboratories, so that laboratory workers may arrange to attend the meeting. Time will be given to a demonstration of the Neufeld method; there will be opportunity also to gain additional information pertaining to laboratory procedures for the early diagnosis of pneumonia.

The program will also give emphasis to the essential part played by the public health laboratory in control measures against syphilis.

Guest speakers whose names appear on the program are A. J. McLaughlin, M.D., of Ann Arbor, Michigan, professor of public health administration, University of Michigan; W. H. Haskell, D.V.M., of Washington, D. C., milk specialist, United States Public Health Service; and F. E. Schmidt, M.D., of Chicago. Physicians and local health officers are cordially invited to attend the public health meeting, which immediately precedes the Eighty-seventh Annual Session of the Iowa State Medical Society. The tentative program is as follows:

Hotel Fort Des Moines, Des Moines, Iowa
Tuesday, May 10, 1938

Morning Session

- 9:00 Registration
- 9:15 Welcome to members and those attending—William Woodburn, M.D., Boone, Iowa, President, Iowa Public Health Association.

- 9:30 A Fact Finding Survey of Industrial Health Hazards in Iowa—Paul Houser, Des Moines, Iowa, Division of Industrial Hygiene, Iowa State Department of Health.
- 9:45 Observations on a Water-borne Epidemic of Gastro-enteritis—Carl F. Jordan, M.D., Des Moines, director, Division of Preventable Diseases and epidemiologist; and Charles D. Mullinex, Des Moines, Division of Public Health Engineering, Iowa State Department of Health.
- 10:10 Finding Syphilis Through the Laboratory—M. E. Barnes, M.D., Iowa City, director, and Miss M. P. Spanswick, Iowa City, serologist, State Hygienic Laboratory
- 10:40 Follow Up of Delinquent Patients—Elizabeth Wyss, R.N., Le Mars, nurse supervisor, Health District No. 1.
- 11:00 Essentials in the Safeguarding of Public Milk Supplies—W. H. Haskell, D.V.M., Washington, D. C., milk specialist, United States Public Health Service, Bureau of Dairy Products, City Health Department, Chicago.

Noon Luncheon Meeting

Walter L. Bierring, M.D., Presiding

Address—Local Health Organization in Relation to Public Health—A. J. McLaughlin, M.D., Ann Arbor, Michigan, professor of public health administration, University of Michigan.

Afternoon Session

Pneumonia Symposium

- 2:00 Marshalling Health Forces Against Pneumonia—Walter L. Bierring, M.D., Des Moines, Commissioner, Iowa State Department of Health.
- 2:20 The Neufeld Method of Sputum Testing—I. H. Borts, M.D., Iowa City, Iowa, assistant director, State Hygienic Laboratory.
- 2:40 Serum and Adjuncts in the Care of the Pneumonia Patient—H. W. Rathe, M.D., Waverly, Iowa.
- 3:00 Management of the Pneumonias—F. E. Schmidt, M.D., Chicago, Illinois.
- 4:00 Visit to Iowa State Department of Health.

Study of the Neufeld Method in Pneumonia

Who? Laboratory technicians and others, under direction of I. H. Borts, M.D., Iowa City, assistant director, State Hygienic Laboratory.

What? Laboratory Periods for Practice of the Neufeld Method.

When, 9:00 A. M.—12:00 Noon—Tuesday and Wednesday, May 10 and 11, 1938.

Where. At Serum Center of the Iowa State Department of Health, 1027 Des Moines Street, one block north of State House.

prevention, applied early in life and repeated before and after admission to school. The change in regulations should also bring about better cooperation on the part of families, more complete and accurate reporting of smallpox and hastening of the day when this disease will be banished from the borders of this state.

Changes in the administrative control of smallpox, effective April 15, have been advised and approved by the State Board of Health, of which E. M. Myers, M.D., of Boone is president.

REVISION OF SMALLPOX REGULATIONS

Rules and regulations of the Iowa State Department of Health which pertain to smallpox, have been revised in order to place primary emphasis on successful vaccination or revaccination and upon isolation of active cases and of susceptible persons.

Morbidity and mortality records of past years show clearly that only limited progress can be expected in the control of smallpox, as long as emphasis is upon a rigid type of quarantine with neglect and disregard of a specific preventive measure known and practiced for more than 140 years. During the thirty year period, from 1908 to 1937, officially reported cases of smallpox in Iowa totaled 50,303. During the same period, 207 Iowa persons died needlessly, but it is hoped not in vain, as the direct result of smallpox and its complications. Smallpox regulations as revised, will allow the breadwinner to enter and leave his home and to continue the support of his family, provided he shows definite evidence of immunity to smallpox.

It is confidently expected that the new regulations will increase attention to specific means of

PNEUMONIA FILM PRESENTED AT MEDICAL MEETINGS

During the week of February 28 to March 5, medical meetings on the subject of pneumonia were held in Council Bluffs, Creston, Davenport, Ottumwa, Centerville, Washington, Burlington, Mason City and Waterloo. A film entitled "Management of the Pneumonias" and edited by Jesse M. Bullock, M.D., was shown and discussed by F. E. Schmidt, M.D., of Chicago. Opportunity was afforded at each meeting to speak of the pneumonia control measures of the Iowa State Department of Health, with particular reference to diagnostic antipneumococcic serum which the department supplies to more than one hundred hospitals and laboratories of the state and regarding curative antipneumococcic serum, furnished for the indigent or underprivileged patient whose type of pneumonia has been determined by means of the Neufeld technic.

The State Department of Health desires to express appreciation to officers of the various county medical societies for their active participation in arranging a successful series of meetings.

PREVALENCE OF DISEASE

	Feb. '38	Jan. '38	Feb. '37	Most Cases Reported From
Diphtheria	22	22	17	Muscatine, Mills
Scarlet Fever	998	993	1166	Polk, Wapello, Black Hawk
Typhoid Fever	5	2	1	Buchanan, Polk
Smallpox	171	243	140	Appanoose, Marion
Measles	264	226	11	Scott, Van Buren, Johnson
Whooping Cough	117	170	94	Cedar, Dubuque, Johnson
Cerebrospinal Meningitis	7	8	6	Polk, Wapello
Chickenpox	352	517	239	Des Moines, Dubuque, Woodbury
Mumps	56	54	124	Dubuque
Influenza	49	15	587	Fremont, Cedar
Poliomyelitis	0	1	3	(For State)
Tuberculosis	54	52	36	(For State)
Undulant Fever	10	7	6	(For State)
Gonorrhea	252	162	188	(For State)
Syphilis	280	301	214	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

LEE FORREST HILL, Editor.....Des Moines
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*Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines*

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII APRIL, 1938 No. 4

GREETINGS TO THE IOWA STATE MEDICAL SOCIETY

Again it becomes the pleasure of the Polk County Medical Society to welcome the members of the Iowa State Medical Society to Des Moines. We take a little selfish pride in doing so, not from the mere fact of having you, but rather because of what you are able to bring to us. We enjoy the fellowship with you in our own homes; and every possible effort is being expended to make your sojourn pleasant, comfortable and profitable. Our sincere wish is that you come early, leave worries behind, and enjoy yourself.

O. W. King, M.D., President
N. Boyd Anderson, M.D., Secretary

THE EIGHTY-SEVENTH ANNUAL SESSION

On May 11, 12 and 13, the Iowa State Medical Society convenes in Des Moines for its Eighty-seventh Annual Session. During these three days the culminating efforts of weeks and months of committee conferences and planning, of individual study and preparation will be placed on exhibition in various ways for the information and entertainment of the members and guests of one of the nation's outstanding state medical societies. Almost a thousand physicians will gather from all corners of the state to participate in the meeting. Only those who feel compelled to stay at home by force of circumstances will willingly miss this opportunity to be brought abreast of the times in scientific and commercial medical matters.

The listing of all the advantages to be derived from attending the convention is unnecessary, but there are a few which appear particularly important. Foremost among these is the opportunity for the renewal of old friendships and the forma-

tion of new ones. The good fellowship and close harmony existing among members of the medical profession is at once the envy and inspiration of many professional and lay groups. It is doubtful if any other medical meeting fosters the spirit of enthusiasm for "pulling together" as a united group as does this annual state conference. No one can return to his routine of professional duties after experiencing all that such conventions have to offer without receiving some degree of inspiration to be a better physician.

Elsewhere in this issue of the JOURNAL the scientific program is published in complete detail. We think it exemplifies what an excellent post-graduate course for the general practitioner of medicine should contain. We hope every member in attendance will bear in mind the hours of research and study which each speaker has spent in preparing his subject for presentation, and will show his appreciation by his presence and attention when papers are being delivered. The program committee is to be congratulated upon its selection of guest speakers. The presence on the program of these nationally known figures alone insures a medical feast which few will want to miss.

We would especially call the attention of our readers to the scientific and commercial exhibits, the preparation of which has been characterized by considerable care and effort. An innovation in the scientific exhibits this year will be the showing of motion picture films upon a variety of subjects. Sufficient films will be available to make a continuous showing throughout the day. We feel the exhibits merit a visit by every member in attendance at the session. Another new feature which promises to be of unusual interest is the "hobby" show under the direction of Dr. Julian M. Bruner. Here will be revealed what physicians do in their spare time, and we predict many surprises for those who visit this department.

No annual session would be complete without its lighter side. The golf tournament at Wakonda Club on Tuesday, May 10, will attract the "hookers" and "slicers." We have not been informed as to what other entertainment has been provided, but we are certain this has not been neglected, and we are sure the wives of visiting physicians will not have to be idle while their husbands are "in conference."

The JOURNAL hopes our annual session this year will be bigger and better than ever before. It can be made so if each member who possibly can will reserve the eleventh, twelfth and thirteenth days of May to come to Des Moines.

MEDICAL SERVICE PLANS AND PROPOSALS

One of the objectives which the JOURNAL has set for itself is to keep pace, in its editorial columns, with the developments in the various plans and proposals designed to change or modify the existing system of delivery of medical services. We assume that this subject is of the utmost importance to our readers. Whether or not any radical change is to occur in our system of medical practice within the next few years is undoubtedly dependent to a large extent upon the demands of the people. The informed physician can exert a great deal of influence in his particular community in fashioning public opinion on medical matters.

Proponents of organized medicine are firmly convinced that the system which is responsible for bringing medical practice in America to the highest standard existing anywhere in the world, is the system which is best, not only for organized medicine itself, but also, and of even greater importance, is the system which is best for our people. This latter fact is one which needs to be stressed. Propagandists for other systems of medical practice will use and are using misstatements and distorted half-truths in an attempt to sway public opinion to their way of thinking. Therefore, if the present method of distribution of medical services is to be preserved, in the interests of the present and future sick people of the nation, such propaganda must be met and refuted at every turn. We cannot expect any outside benevolent group to fight the battle for us. Each physician must do all he can to convince a public, which apparently has "gone hysterical" for change, that only in the retention of a system which has proved itself unquestionably can the progress of medical service continue upward on the brilliant pathway which it has followed for so many years. It seems, therefore, particularly important for medical journals to keep constantly before their readers, for their information and use, all significant proposals and trends relating to the social and economic phases of medical practice.

With the above idea in mind we wish to call attention to several developments in the immediate past which have a bearing on the subject. Of particular interest is the report on "The Need for a National Health Program," submitted to the President of the United States by Miss Josephine Roche, Chairman of the Interdepartmental Committee to Coordinate Health and Welfare Activities. This committee, pursuant to executive order (the President), "created a Technical Committee on Medical Care to survey the health and medical care activities of the United States government, to review in particular the participation of the government in the health services of the nation and to

submit recommendations on federal participation in a national health program." The personnel of the Technical Committee is not announced in the published report.

The general idea of the report seems to be that while the accomplishments of the present medical regime are recognized, the nation is entitled to much better medical care than it is receiving. According to the report, the fault does not rest in an inadequacy of scientific knowledge, but in an inadequacy of funds to purchase medical services and in an inadequacy of distribution of medical services in areas where the need for such services is greatest. The committee finds that "the effective distribution and utilization of health and medical services demands a national plan for the economic applications of our resources in maintaining and improving health." The report states that, with adequate care, from one-half to two-thirds of the deaths of women in childbirth could be prevented. The infant mortality rate, and the mortality rate among infants in the first month of life could likewise be reduced by one-half. Rheumatic heart disease, infantile paralysis, the acute communicable diseases, pneumonia, tuberculosis, malaria, syphilis, cardiovascular renal diseases, cancer and diabetes, are specifically mentioned as diseases which would merit attention under the plan because of the possibilities of preventing death or ill health. Increased activity in the field of industrial hygiene is advocated; and increased hospital facilities, particularly in rural areas, are recommended as an economic need.

Practitioners of medicine who study the report are immediately struck with a vision of what will be left in the field of private practice if the government should decide to adopt the proposed national health program. Furthermore, one wonders how such a program would be financed. The provision of funds to accomplish all that is proposed would add greatly to the tax burdens of a country already unable to maintain existing governmental expenditures. One can hardly escape the conclusion that the committee's recommendations are more idealistic than practical.

Closely related to the above is a proposal made by Dr. W. C. Rappleye, dean of the medical faculty of Columbia University Medical School, before the Annual Conference on Medical Education and Licensure, that there be formulated a National Council on Medical Education, Licensure and Hospitals. Such a council would be composed of representatives of the university medical schools, hospitals, practicing profession, specialty boards, state licensing boards and public health agencies. Of particular significance is Dr. Rappleye's statement to the effect that such a

council, already in existence, would be of distinct advantage in case the federal government should increase its financial support of medical service, teaching and research. Here again then, and from an entirely different source, comes an indication of the trend toward government participation in medical practice.

Recent developments in Congress indicate that the President's reorganization measure seems assured of being enacted into law. If so, the establishment of a Department of Welfare, with its head a member of the President's Cabinet, will necessarily follow, since it is one of the major components of the reorganization bill. The question of particular importance to the medical profession centers around the composition of the Department of Welfare. Members of the medical profession and the Board of Trustees of the American Medical Association are clear cut in their demands for a Department of Health, which shall embrace all the activities dealing with the health of the nation. They rightly feel that federal interest in public health should be on an equal basis with the other major departments, such as commerce, justice, labor and state. If the Department of Welfare falls short in this respect, and incorporates only part of the health activities of the nation, its establishment will be distinctly detrimental, since it will retard the development of a complete Department of Health.

The further development of the Department of Welfare and the type of individual selected to be its head and to become a member of the President's Cabinet, will be viewed with a great deal of interest by all intelligent physicians. Finally, it remains to be seen what relationship the newly created Department of Welfare will have in putting into effect such a national health program as that proposed by Miss Josephine Roche.

THE SPECIFICITY OF STREPTOCOCCI

The recent change, by the Iowa State Board of Health, of the quarantine rules in regard to scarlet fever is a forward step in the control of the disease that is most welcome to the practicing physician. The new ruling permits the breadwinner of the family to live at home unless he is a food handler or one whose work entails contact with children. Heretofore the economic hardship resulting from quarantine prompted many parents to avoid seeking professional advice, which caused further spread of the disease. The new law requires the isolation and placarding of cases of streptococcic sore throat as well as scarlet fever. The old ruling which quarantined the latter but not the former has been an inconsistency which has been difficult to explain to the physician or layman.

The concept that the streptococcus diseases are each caused by a specific strain of hemolytic streptococci has been challenged in the last few years by numerous bacteriologists and clinicians. The one school contends that a specific strain of streptococci causes scarlet fever, that another specific strain is the etiologic agent in erysipelas, that another particular type causes septic sore throat, and that still another is the specific cause of puerperal sepsis. The most recent view is that any strain of hemolytic streptococci is capable of producing any one of these diseases, and that the organism possesses no specificity. The argument is heated and at times vitriolic. To the clinician the lack of specificity is demonstrated frequently in every day practice, such as the common experience of seeing a patient with scarlet fever, and in a few days finding contacts with streptococcic throats but with no rash. Another instance is the case of the pregnant mother who subsequently develops puerperal sepsis after caring for the child with a streptococcic ear. The man on the firing line can recall many incidents which cause him to question the specificity of streptococci.

The advisability of active immunization against scarlet fever by five doses of Dick toxin resolves itself into a debate between the public health authorities and the practicing physician. The former advise its use, and the latter after numerous unpleasant experiences deny its practicability and question its value. The Dick's present long series of cases to substantiate the contention of specificity and the value of active immunization. The opponents deny the specificity of the organism, question the possibility of active immunization against any streptococci, deny the specificity of the Dick test, and contend that the administration of toxin prevents the development of a rash and deprives the physician of the most reliable diagnostic sign when the patient becomes infected with scarlet fever.

Until the question of the specificity of streptococci and the reliability of the Dick test are settled beyond doubt, the solution of the problem seems to lie in controlling the spread of the organism, rather than inducing active immunity against it. Prevention of transmission can best be accomplished by the pasteurization of milk, the isolation of patients with streptococcic infections, and, particularly during epidemics, the isolation of streptococci carriers.

At the present time the United States Public Health Service and the Massachusetts State Board of Health are investigating the entire subject of scarlet fever immunization. It is expected that these investigations will aid materially in the evaluation of this unsettled problem.

HOSPITAL INSURANCE IN IOWA*

Hospital insurance has entered into the field of hospital finance and is developing rapidly in all parts of the country. During the past five years more than one and one-half million employed persons and their dependents have become subscribers to voluntary hospital insurance plans. In most states these are classed as non-profit corporations and do not act under the insurance laws. In New York the Associated Hospital Service Corporation has 555,894 subscribers; in St. Paul, 138,236; and in St. Louis, 18,000. These various companies have been operating from three to five years, are paying their obligations to their subscribers, and are laying aside surplus funds to carry them through any unusual demands that might come.

In Iowa the plan was first started by the Sentinel Hospital Insurance Company, incorporated as a mutual accident and health company. From the organization in September, 1936, until August, 1937, the company attempted to function, but merely succeeded in losing ground financially. In August, 1937, the name was changed to The Iowa Hospital Service Insurance Company, and the by-laws amended so that a majority of the board should at all times be hospital administrators or trustees. In November it was further provided that the Iowa State Medical Society should have the privilege of appointing three members on the board, this number to increase as the size of the board increases so that one-third of the members would be from the medical profession. Further definite provision was made that no member of the board should receive compensation for his services. This action was taken so that there would be no question that the organization was a strictly non-profit corporation, operating for the benefit of the subscribers.

In February, 1938, the board carefully considered the condition of the company, and reorganized the office and sales organization. Salaries of full time employees were set, and salaried salesmen were limited. With the present budget, and with no increase in policies in force, the company will be able to pay all expenses, including claims of the hospitals. This, however, is not sufficient. To be a sound, reliable working company there must be an increase in policyholders sufficient to provide a reserve fund which may be used at any time when unusual hospital bills might be incurred. With the new management, and with the help of those who are interested in community enterprises, this can be done. It must be fully understood that this is

not a means of profit to any individual, that it is only indirectly of benefit to the hospitals, and that the fundamental basis of the organization is that of service to the individual who finds himself in need of hospitalization without the means to pay the bill.

The policy of this company, for a payment of seventy-five cents per month, provides the subscriber with twenty-one days of hospital care in a \$4.50 per day private room (forty-two days in case of accident), the use of the operating room as often as necessary; routine laboratory services such as blood counts, urine analyses, etc.; and ten dollars on the anesthetist's fee. In outside hospitals which are not affiliated with the company he is allowed a credit of five dollars a day on his hospital bill, up to twenty-one days in any contract year. The policy does not include conditions covered by the Workmen's Compensation Law, insanity, alcoholism, venereal diseases, tuberculosis, or quarantinable diseases. Obstetric cases are cared for only after the patient has been enrolled for one year. For an additional thirty-five cents per day each, other members of the employed individual's family may have coverage to half the extent of the full policy.

In developing this company, every effort was made to exclude the provision of any medical services, the only exception being the anesthetic. X-ray treatments, special laboratory procedures and similar medical and semi-medical procedures are not included. The officials of the company hope the medical profession will not feel that they are attempting to enter into the medical field, since this is merely a scheme to help the individual budget for his hospital expense. The success or failure of the plan is largely in the hands of the medical profession. Unjustified and excessive requests for hospitalization would soon cause such a company to become insolvent. The benefit to the doctor in having his patient insured in such a company, so that he could be sent to the hospital when necessary, with the bill provided for in advance, would be very great.

The Iowa State Medical Society has investigated this company, but has not placed a definite stamp of approval upon it. Three members of the society have been appointed as members of the board of directors. They are attending the meetings to help in directing the affairs of the company to the best interests of the hospitals, the medical profession, and the patient. In several instances the county medical societies have developed these hospital insurance associations themselves, as an aid to their patients. As a rule they report that they are well satisfied with the development of the project, and that ultimately

*Prepared by the Medical Economics Committee.

it is of great benefit to the medical man in the care of his patient, and also in relieving the patient of the necessity of paying his hospital bill out of savings and earnings in a lump sum. There are approximately 2,500 policyholders in this company at present. In order to have a better selection of risks, and so that the collection of the small fee or premium will not be too costly, the policies are at present written only for employed individuals in groups. The payment of the premium is either by payroll deduction, or through one member of the group who acts as treasurer and collects for the whole group. At present several plans are being studied in an effort to make the benefits available to the large majority of the people in Iowa who are not employed in any group, but who are, nevertheless, anxious to have this protection.

X. THE TREATMENT OF MYOCARDIAL INFARCTION*

*"But there are reasons for believing that even large branches of the coronary arteries may be occluded without resulting death."
—Herrick—1912.*

Clinical experience has justified Herrick's optimistic prognosis of myocardial infarction. Willius¹ recently gave the mortality rate from coronary occlusion as 47.5 per cent for the first attack, 69.8 per cent for the second, and 75 per cent for the third. Even these figures are too high because infarct scars are often found in the myocardium of persons who were unaware of any cardiac trouble. It is astounding how much abuse a heart can take and still carry on its work. This is well illustrated by the following instance.

In 1927 a man fifty-six years of age came to my office with a right-sided effort pain. In 1929 he had a typical anterior occlusion which prevented him from working for six months. In 1937 he died from congestive heart failure after being away from work for only two weeks. Postmortem examination disclosed three arterial occlusions; one in the right coronary artery five centimeters from its mouth; one in the anterior descending artery halfway down the interventricular groove; and one in the circumflex artery four centimeters from its origin. The occlusion of the right and circumflex arteries apparently had occurred prior to 1929.

The clinician is therefore amply justified in maintaining an attitude of real optimism about the outcome in a case of myocardial infarction. Such an attitude will do much to allay the anx-

iety of the patient's family, and will make a tedious and harrassing convalescence bearable for the patient.

The diagnosis of coronary occlusion is made on the presence of persistent radiating substernal distress associated with signs and symptoms of shock. These are followed some hours later by fever, leukocytosis, cardiac arrhythmia (extrasystoles, etc.), pericardial friction rub (in about one-fifth of the cases), increased sedimentation rate, and, in the vast majority of cases, characteristic changes in the electrocardiographic curves, Q₁T₁ or Q₃T₃ types, or a combination of these. The physician often finds the patient still in the throes of his angina. At times he may be in the very spot in which he suffered the heart pain, for such patients are loathe to move. When this happens, the physician may proceed somewhat as follows: After a gentle cursory verification of his first impression, he should give the patient a tablet of nitroglycerine to dissolve orally while a syringe is loaded with 30 milligrams (one-half grain) of morphine. Half of this should be administered. While the narcotic is being absorbed, the physician should make arrangements for a good bed for the patient, preferably at home, and for a nurse skilled in scientific "noninterference." There are few diseases in which such a nurse is more essential to recovery than in coronary thrombosis. If the distress is not relieved by the first dose of morphine, the second half of the dose should be given. From that time enough morphine should be administered to keep the patient comfortable until the acute distress is over (usually from two to four days).

While the second half of the dose is taking effect, the physician has time to visualize for himself what has happened to the patient, and to plan a therapeutic regime for the future. A portion of the myocardium has been killed, and the endocardium covering this has been injured enough so that a clot is being formed on it. Therefore, the work of the heart must be reduced as much as is compatible with life. Morphine is the most powerful means for securing this end. The patient should move as passively as possible until the worst of the crisis is past. He should be carried to bed and placed in a comfortable position. His clothing should not be removed until a dextrous nurse can do so without disturbing him. If cyanosis and difficult breathing ensue, oxygen should be administered, preferably by the tent method. The nasal catheter route is also efficacious if a brisk bubbling flow (six to eight liters per minute), is continued as long as the patient needs the gas.

If symptoms of congestive failure appear, they

*Editor's Note.—This is the tenth article in this series of editorials prepared by Dr. Daniel J. Glomset on modern cardiac therapy. Earlier issues of the JOURNAL carried the previous nine parts.

must be treated as outlined in a following chapter dealing with congestive failure. Similarly, dangerous arrhythmias demand appropriate handling, but the danger lies in overtreating rather than in undertreating. It requires rare courage to restrain from meddlesome interference when things go wrong. The patient requires only cracked ice by mouth until he becomes very thirsty, when sips of water or strained fruit juices may be given. If the stomach rebels, five per cent glucose in physiologic salt solution should be given very slowly, intravenously, at the rate of 2,000 cubic centimeters per twenty-four hours, until liquids are tolerated by the stomach. When this is possible, the procedure is that outlined in Chapter IV.

The bowels should be kept open. On the second day, small doses of a mild laxative (cascara or phenolphthalein, etc.) may be given. That night 100 cubic centimeters (one-half cup) or less of oil may be instilled into the rectum for retention in order to facilitate an easy bowel movement in the morning. A small soapsuds enema may be necessary. Thereafter the bowels should be kept comfortably loose during convalescence.

The patient should have no visitors during the first two weeks. Soothing members of the family may sit with him if they make him more comfortable. Absolute rest, an abundance of sleep, and complete relaxation must be the rule for the first two weeks. If necessary, the least harmful drugs which will accomplish this end should be employed. If, after two weeks, the patient's bases are free from râles, he has won his first round with death, and should be told so. He should also be told that his heart's wound is far from healed, and that if he wants the healing to proceed most rapidly, he must not "rock the boat." The rigor of the first fortnight may gradually be lessened. The hateful bed pan may be replaced by a bedside commode, and the sick person may be allowed the rare privilege of feeding himself and of having visitors.

The attending physician's daily impression is the most reliable guide as to when the bed period should be terminated. The rapidity with which the pyrexia, the leukocyte curve, and the sedimentation rate return to normal are valuable aids, as is also the speed with which the electrocardiographic tracings swing back toward normal. If the condition of the patient is good, he may be allowed to be up soon after the fourth week. For the next two or three weeks he is usually so delighted with his new freedom that the physician has little difficulty in stalling off the day when he will be asked pointblank, "When can I go back to work, Doctor?" In answering, it is best

to err on the safe side. There are those who believe that when the electrocardiographic tracings indicate a posterior infarct, the entire period of convalescence need not exceed six or eight weeks. However, I do not believe we should place so much reliance on the electrocardiographic findings. At least three weeks are required for a surgical wound to heal perfectly in most parts of the body, even when those parts are at rest. The wound in the heart is jagged, poorly supplied with blood, and in constant motion. Therefore healing in this organ will take place slowly. In my own experience I have seen young connective tissue present in the myocardial scars eighteen months after an occlusion, and changes in the electrocardiographic tracings take place nine months after the accident. Therefore, I do not believe any period of convalescence should be less than six months, and in a severe case it may be advisable to prolong it for a year or more.

What should a patient do with his life after his period of convalescence is over? It must be remembered that atheromatosis is a progressive disease which cannot be arrested. It should also be remembered that there is a scar in the heart wall, and a mural thrombus in the heart chamber. Therefore, the heart is crippled and it must be given the care due a cripple. Hard manual labor can no longer be allowed. Jobs involving even moderate physical labor must be undertaken with caution. Any effort which brings on "pressure" or tightness around the wrist must be avoided, whether this effort is mental or physical. Long hours of sleep, midday naps, frequent vacations, small meals, and a happy, even life have made it possible for many a cardiac cripple of this type to become a useful member of society, and a joy to his family for years and even decades. Such, in brief, is the management of a moderately severe case of clinical myocardial infarction. It is obvious that in milder cases, less stringent means may be employed; and that in more severe cases, when dangerous complications arise, the regime must be altered accordingly. A patient who has had this type of bout with death will be wise to retain medical counsel for the remainder of his life.

The physician will find that his postocclusion patients divide themselves roughly into three groups. In the first group are those who accept their limitation philosophically and carry on cheerfully. Fortunately, this group is a large one, and the physician may mentally point with pride to it in his own "low" moments. The second group consists of the "know-it-alls" who, when they feel their vigor returning, promptly

(Continued on page 166)

SPEAKERS BUREAU ACTIVITIES

BOOST YOUR COLLEAGUES

As this issue of the JOURNAL reaches you, about four hundred and fifty members of the Iowa State Medical Society have been registered in the various postgraduate courses which have been arranged for the profession by the Speakers Bureau of the Society. In these days when new medical knowledge constantly "rains like manna" upon us, every physician is inspired to procure the most recent available knowledge for the benefit of his patients. It was to assist the members of the society in acquiring this new medical information that the Speakers Bureau was organized, and the work of the past few years has been dedicated to that ideal. Each member of the Bureau sincerely hopes that the twenty-four hundred physicians who have taken advantage of the opportunities offered by our postgraduate education have obtained much worthwhile, factual knowledge; and that the benefit of having this additional knowledge has evidenced itself in the more successful treatment of their patients. The continued popularity of the courses makes us feel that much has been accomplished along this line.

There is another and perhaps a greater value which must have accrued from membership in the classes which have been conducted by the Bureau. We like to think that each participant, as he listens to the various teachers, feels a bit envious of the instructor for his mastery of the subject; so envious, perhaps, that at the close of each meeting, he departs with the firm resolution to work harder than ever on the Herculean task of becoming a master physician. As a result of such frequent inspiration, it is our hope that each physician has been imbued with such a thirst for knowledge that he will make a continuous effort to master that phase of medicine which interests him most.

Still another advantage, which has certainly come from the cooperative learning which has been taking place in Iowa during the last eight years, is that which Dr. McManus has so aptly called the value of "breaking bread" together. It is inconceivable that physicians can meet regularly each week, for five to ten weeks each year, and not discover that each one in the group is, in the best sense of the word, a "good fellow". Petty jealousies are relegated to their proper place in the background, and personal prejudices

have a way of working themselves out when physicians meet one another in good fellowship to discuss and interchange ideas on the fundamental principles of the profession in which they are engaged. Individuals who have attended these courses respect and admire their instructors and their colleagues.

The above sentiments have been expressed to the members of your Speakers Bureau Committee many times. The purpose of this message is to urge each of you who have attended these courses to tell your colleagues, tell your competitors, tell your teachers, the fine things you have told us. In other words, and in common parlance, boost your Iowa colleagues in season and out of season. Nothing is so poisonous to one's most noble aspirations as ignorant censure, indifference, fault finding, and belittling of one's efforts by those who should be friends and supporters. Such poisonous miasma springs from the evil wells which are present in all of us. Our task is to prevent it from coming to the surface. When we let it escape, it hinders the noble efforts of the strongest, and entirely paralyzes the good intentions of the weakest.

Therefore, let us boost the Iowa physicians, boost our medical faculty, boost the doctors in your communities who through constant effort and ceaseless toil are growing into bigger and better physicians; and above all, boost your less fortunate and less informed competitors, because a friendly word from you may help him become a better physician, a bigger man, and may perhaps add him to your own list of friends.

For the Speakers Bureau Committee,
Daniel J. Glomset, M.D., Chairman.

RADIO SCHEDULE

WOI and WSUI

Wednesdays at 4:00 P. M.

April 13—Diet in Disease

Mary Lou Longmire, chief dietitian, Iowa
Methodist Hospital, Des Moines

April 20—The Spine

F. L. Knowles, M.D.

April 27—Arthritis

John C. Parsons, M.D.

May 4—Brain Tumors

Henry G. Decker, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. S. E. LINCOLN, 2220 East Thirty-second Street, Des Moines

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

THE ETHICS OF ADOPTION*

The demand of childless families for children to adopt keeps pace with the well known decline in the birth rate. In Iowa there are more than five hundred children adopted each year. Since there is a growing demand for children from birth to four years of age to adopt it is important that there should be an understanding of the serious questions involved. The question of correct procedure in adopting a child becomes one of vital importance and should be of general interest.

Because there is so much sentiment connected with it at every point, it is of paramount importance that adequate protection be thrown around the participating parties to avoid the many pitfalls that often bring tragedy and disappointment into the lives of both child and foster parents. It is essential to learn what safeguards are provided by our present law and what is lacking. We know that frequently children are adopted without due consideration being given to their best interests. Many adoptions are not going through the established channels but are arranged by individuals who are much more interested in the family for whom they seek a child than providing suitably for the needs of the child.

It is apparent that when people decide to adopt a child the usual care they exercise in selecting any household gadget is not observed. They throw discretion to the winds and flounder about in every direction in their efforts to find a child immediately. Once their decision is made they can brook no delay. Their usual good sense should prompt them to seek information from those qualified to know, rather than from the uninformed. If we are ill we consult a physician. If we are in conflict with the law we consult a lawyer. If we wish to build a home we consult an architect. If we need spiritual advice we seek a minister, but if we want to adopt a baby we consult all of these and perhaps many others. We do not consult a child placing agency which is established by law to give expert advice on the placement of children and their adoption in suitable foster homes.

When we are considering making a child a permanent member of the family certainly we should be interested in much more than physical appearance and superficial information. The medical, mental, physical and social background of the child should

concern us greatly. We should ask ourselves the following questions: What are the inherited diseases and tendencies in his background? What are the mental levels of his relatives? What are the physical characteristics of his family which would make him unsuited to our particular home? What are the social traits and tendencies which would probably make him unacceptable as a member of our family? What is the child's own medical, mental, physical and social status?

(To be continued next month)

Muscatine County Activities

Mrs. P. M. Jessup, who has completed her year as president of the Woman's Auxiliary to the Muscatine County Medical Society, has sent in the following report, touching the highlights of the year's activities.

"Our Auxiliary has a membership of eighteen, with an average attendance of ten to thirteen. We meet nine months of the year. Last May we sponsored a lecture on Cancer—Woman's Enemy, which was open to the public and very well attended. Dr. William F. Mengert of Iowa City was the speaker. Mrs. Lillian D. Smalley of the Central Institute for the Deaf in St. Louis, spoke before members and guests in September. In October the medical society entertained the auxiliary at a banquet. Guest speaker for the occasion was Dr. Fred M. Smith of Iowa City. In October also the auxiliary complimented new members at a tea, which created a friendly spirit for all of us. In February we sponsored another public meeting for women only. Dr. M. M. Benfer of Davenport spoke on What We Should Know About Venereal Diseases. This meeting was exceptionally well attended. Mrs. B. E. Eversmeyer has been program chairman for the past year, and deserves the credit for the fine programs the auxiliary has presented."

Mrs. P. M. Jessup, President.

Sac County

A new auxiliary to the Sac County Medical Society was recently organized, and the following officers were elected for this year: Mrs. J. R. Dewey of Schaller, president; Mrs. L. B. Amick of Sac City, vice president; and Mrs. James McAllister of Odebolt, secretary and treasurer.

* This article has been especially prepared for the Woman's Auxiliary by Mae Habenicht, M.D., of Des Moines.

SOCIETY PROCEEDINGS

Appanoose County

Members of the Appanoose County Medical Society met in Centerville, Wednesday, March 2. Featuring the meeting was an address by F. E. Schmidt, M.D., of Chicago, who presented an illustrated lecture on The Management of Pneumonia.

Black Hawk County

Joseph E. Schaefer, M.D., D.D.S., faculty member of Northwestern University Medical School, Chicago, was guest speaker for the Black Hawk County Medical Society, at a meeting held in Waterloo, Tuesday, March 15. Dr. Schaefer spoke on Modern Plastic Surgery, and illustrated his lecture with models, moving pictures and stereopticon slides.

Bremer County

The Bremer County Medical Society met in scientific session Thursday, March 24, in Waverly, and entertained as its guests, members of the Bremer County Bar Association and officers of the local peace organization. Harold W. Morgan, M.D., of Mason City, delivered the address of the evening on Evidence of Alcoholic Intoxication, and the paper was discussed by the Honorable Judge Henry L. Graven, also of Mason City.

E. C. Kepler, M.D., Secretary

Cerro Gordo County

The following scientific papers were presented at the regular monthly meeting of the Cerro Gordo County Medical Society, held in Mason City, Tuesday, March 22: Acute Rhinitis and Otitis Media, with particular reference to treatment, Dean M. Lierle, M.D., professor of otolaryngology, State University of Iowa, College of Medicine, Iowa City; and Review of Diseases of the Esophagus, R. R. Flickinger, M.D., of Mason City.

Crawford County

The Crawford County Medical Society held its monthly meeting Tuesday, March 15, at the Hotel Denison in Denison. The first order of business was a discussion of a credit policy to be adopted by the membership of the society. Two members were designated to formulate the policy, which when accepted by the society, will be mailed to every home in Crawford county, as well as many of the adjoining counties. It shall state the basis for which credit will be allowed in the future by the medical men, and shall carry the names of every licensed practitioner in the county. The next business matter was the adoption by the society of the rural resettlement plan for the local disbursement of funds

created for the anticipated care of clients of the rural resettlement administration.

The scientific speaker for the evening was Olin J. Cameron, M.D., of Omaha, assistant professor of dermatology and syphilology at the University of Nebraska, College of Medicine. Prior to his lecture, Dr. Cameron conducted a skin clinic of some interesting cases. His lecture was thoroughly illustrated by lantern slides and was particularly valuable because of the practicability of the methods of handling. The many geographical references of incidence and severity added novelty to the lecture.

J. James Duffy, M.D., Secretary

Fayette County

Fifteen members and two guests of the Fayette County Medical Society met in Oelwein, Tuesday, March 8. Much of the time was spent making plans for the Four County Medical meeting which is to be held at Postville, Tuesday, April 5. A film on Allergy was shown, and was freely discussed by all members present at the meeting.

H. H. Wolf, M.D., Secretary

Floyd County

The regular monthly meeting of the Floyd County Medical Society and the Cedar Valley Hospital Clinical Society was addressed on Tuesday, March 22, by Henry G. Decker, M.D., of Des Moines, whose subject was The Clinical Significance of Spinal Puncture and the Examination of the Spinal Fluid.

Ray A. Fox, M.D., Secretary

Johnson County

A symposium on the Treatment of Syphilis was presented as the scientific program when members of the Johnson County Medical Society convened in regular session, Wednesday, March 2, at the Hotel Jefferson in Iowa City. Ruben Nomland, M.D., was chairman, and gave the first paper, entitled Early Syphilis. C. Gregory Barer, M.D., spoke on Neurosyphilis, and P. C. Jeans, M.D., discussed Congenital Syphilis. Dr. Nomland closed the symposium with a paper on Wassermann Fast Syphilis.

W. M. Fowler, M.D., Secretary

Linn County

The next meeting of the Linn County Medical Society will be held Thursday, April 28, with Loyal Davis, M.D., professor of Surgery, Northwestern University Medical School, Chicago, as guest speaker. Dr. Davis has chosen as his subject The Surgical Treatment of Peripheral Nerve Injuries.

T. F. Hersch, M.D., Chairman Program Committee

Pottawattamie County

Arthur Steindler, M.D., professor of orthopedic surgery at the State University of Iowa, College of Medicine, Iowa City, addressed a special meeting of the Pottawattamie County Medical Society, Friday, March 25, at the Hotel Chieftain in Council Bluffs. His address was titled, Flat Feet and Corrective Measures.

Union County

The regular monthly meeting of the Union County Medical Society was held Tuesday, March 1, at the Greater Community Hospital in Creston. After the noon luncheon, F. E. Schmidt, M.D., of Chicago, presented an illustrated lecture on The Typing and Treatment of Pneumonia. Physicians from Clarke, Adams, Adair, Ringgold and Taylor counties were guests of the Union county members.

Carl E. Sampson, M.D., Secretary

Van Buren County

A specially called meeting of the Van Buren County Medical Society was held in Keosauqua, Thursday, March 24, and the following program was presented: Medical Services Among CCC Enrollees, Ingraham Taylor, M.D., of Keosauqua; Sulfanilamide, L. A. Coffin, M.D., of Farmington; Coronary Occlusion, E. E. Sherman, M.D., of Keosauqua; and General Discussion relating particularly to medical relief.

C. R. Russell, M.D., Secretary

Woodbury County

Nathaniel G. Alcock, M.D., professor of genito-urinary surgery at the State University of Iowa, College of Medicine, Iowa City, addressed the Woodbury County Medical Society on Malignancies of the Kidney, at a meeting of that organization held in Sioux City, Friday, March 25. T. R. Gittins, M.D., of Sioux City, presented a ten minute paper on The Use of Nose Drops.

PERSONAL MENTION

Dr. William E. Olson has been appointed assistant physician at The Retreat in Des Moines, to fill the vacancy created by the death of Dr. Ernest C. Hunt. Dr. Olson was graduated in 1930 from the University of Nebraska, College of Medicine, and interned in the Gorgas Hospital in the Panama Canal Zone, after which he spent several years in general practice before entering the field of psychiatry. He comes to Des Moines from Jamestown, North Dakota, where he has been assistant superintendent of the state hospital for the insane.

Dr. Wayne J. Foster of Cedar Rapids, was guest speaker at the March meeting of the local branch of the American Association of University Women.

The meeting was held at the Roosevelt Hotel, Wednesday, March 23, and Dr. Foster spoke on Recent Discoveries in the Field of Medicine.

Dr. H. E. O'Neal, who has practiced at Tipton for the past six years, is returning to Nevada, Missouri, where he has been appointed to the surgical staff of the new Municipal Hospital. His practice will be taken over by Dr. Everett G. Harris, formerly of St. Louis, and more recently of Harlowtown, Montana.

Dr. William Jepson of Sioux City, delivered one of the principal addresses at the southern assembly of the American branch of the International College of Surgeons, when that organization met in Tampa, Florida, Monday, February 28. His subject was "The Future of Surgery and How We May Improve It."

Dr. C. M. Gillespie, formerly of Kellogg, has located in Maxwell, where he will continue the practice of medicine.

Dr. John C. Barton, assistant superintendent of the State Hospital for the Insane in Independence, spoke on "Causes of Mental Disease," for the Waterloo Fortnightly Club, Wednesday, March 2.

Dr. Glenn E. Burbridge has located in Logan, where he will enter the private practice of medicine. For the past few months, Dr. Burbridge has been connected with the CCC Camp in Centerville. He was graduated from Creighton University School of Medicine in 1936, and served his internship at St. Mary's Hospital in Kansas City, Missouri.

Dr. B. S. Walker of Corydon, addressed the Centerville Association of Commerce, Monday, March 21. His subject dealt with "The Sterilization of the Unfit."

MARRIAGES

Miss Wilma Willimack of Cedar Rapids, daughter of Mr. and Mrs. Anton Willimack of Oxford Junction, and Dr. Howard L. Van Winkle of Cedar Rapids, were married Thursday, March 3, in Cedar Rapids. Dr. and Mrs. Van Winkle left immediately for a motor trip through the southern states, after which they will be at home in Cedar Rapids, where Dr. Van Winkle has been practicing for several years.

The marriage of Miss Beulah Sanders of Creston and Dr. Jay E. Houlahan of Mason City, took place Tuesday, March 1, in Creston. After the ceremony the young couple left for a three weeks' trip to New Orleans. Upon their return they will live in Mason City, where Dr. Houlahan is engaged in the practice of medicine.

DEATH NOTICES

Dittmer, Ernest G., of Manchester, aged sixty-nine, died March 14, after suffering a paralytic stroke a few days previous to that time. He was graduated in 1895 from the Chicago Homeopathic Medical College, and at the time of his death was a member of the Delaware County Medical Society.

Hunt, Ernest Alexander, of Des Moines, aged sixty-two, died March 4, of uremic poisoning. He was graduated in 1898 from the University of Illinois, College of Medicine, and at the time of his death was a member of the Polk County Medical Society.

Shirley, Wayne McKnight, of Carroll, aged fifty-seven, died March 20, following a long period of ill health. He was graduated in 1905 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Carroll County Medical Society.

Smillie, Benjamin A., of Gilmore City, aged sixty-eight, died suddenly March 7 of coronary thrombosis. He was graduated in 1903 from the University of Michigan Medical School, and at the time of his death was a member of the Pocahontas County Medical Society.

PHYSICIANS NEEDED IN CCC SERVICE

Last month the JOURNAL carried a notice of vacancies existing in the medical service for the Seventh Corps Area. Since that time we have learned there is a real need for physicians and surgeons who would be interested in entering this type of practice here in the state of Iowa. Any reputable, regularly licensed physician is eligible to enter into a contract for this service. It is requested that those interested communicate as soon as possible with the District Surgeon, Iowa District CCC, Fort Des Moines, Iowa.

FOURTH ANNUAL GOLF TOURNAMENT

The fourth annual tournament of the Iowa State Medical Golf Association will be held at the Wakonda Country Club, Tuesday, May 10. All golfing members of the society are urged to attend; none will be barred. The tournament is open to young and old, weak and strong, scrawny and robust, lean and fat, pale and dark, wealthy and poor, bold and retiring, moral and immoral, wets and dries, ambitious and lazy, smart and dumb, Republicans and Democrats, tactful and blunt, and good and bad golfers. In other words, you are eligible if you are a member in good standing of the Iowa State Medical Society. Dinner will be served in the evening, followed by the awarding of the prizes, election of officers, story-telling, etc. Plan now to attend. We promise all participants the best time of their lives. Wheel chairs and porters will be furnished if the need arises.

H. J. McCoy, M.D., President
J. K. von Lackum, M.D., Secretary

COMING MEETINGS

Because we feel that some of the physicians in Iowa may be interested in a number of national meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

St. Joseph Clinical Society, Seventh Annual Spring Clinic, April 13 and 14, Hotel Robideaux, St. Joseph, Missouri.

Fourth Annual Postgraduate Course on Neuropsychiatry in General Practice, April 25 to 30, The Menninger Clinic, Topeka, Kansas.

American Board of Ophthalmology announces the following examinations during 1938: San Francisco, June 13, Washington, D. C., October 8, and Oklahoma City, November 15. Applications must be filed with the secretary of the organization sixty days prior to the date of examination.

American College of Physicians, Twenty-second Annual Session, April 4 to 8, 1938, New York City.

Association on Mental Deficiency, April 20 to 23, 1938, Richmond, Virginia. E. Arthur Whitney, Elwyn, Pennsylvania, Secretary.

Society for Clinical Investigation, May 2, 1938, Atlantic City, New Jersey. J. M. Harman, Jr., Cleveland, Ohio, Secretary.

Iowa State Medical Society, Eighty-seventh Annual Session, May 11, 12 and 13, 1938, Des Moines, Iowa.

American Medical Association, Annual Session, June 13 to 17, 1938, San Francisco, California.

American Association of Industrial Physicians and Surgeons, jointly with the Midwest Conference on Occupational Diseases, June 6-9, 1938, at the Palmer House, Chicago, Illinois.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28-30, 1938, at the Hannibal-LaGrange College, Hannibal, Missouri.

THE TREATMENT OF MYOCARDIAL INFARCTION

(Continued from page 161)

decide that their doctor is an old fogey whose advice may and should be discarded. This they do, and surprisingly, a number of them "get by" with it long enough to deride their medical friend. In the end, however, they usually fall by the wayside because of their own folly. The third group consists of the high strung intellectuals, the builders of our nation. These recover from their physical wound only to fall victims to a more or less severe cardiac neurosis. Unless the attending physician has the "wisdom of Solomon," and an abundance of tact and sympathy, the second devil may be ten times worse than the first. (See Chapter II.)

REFERENCE

1. Willis, F. A.: Life expectancy in coronary thrombosis. Jour. Am. Med. Assn., cvi:1890-1894 (May 30) 1936.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE CEREBROSPINAL FLUID—By Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$5.00.

ESSENTIALS OF PRESCRIPTION WRITING—By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$1.50.

EYE STRAIN AND CONVERGENCE—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s. 6d. net.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE—Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$8.50.

THE PHYSICIAN'S BUSINESS—By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$5.00.

PRACTICAL PROCTOLOGY—By Louis A. Buie, M.D., professor of proctology, The Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.

SURGICAL DISEASES OF THE MOUTH AND JAW—By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

OPERATIVE GYNECOLOGY—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine, and Robert James Crossen, M.D., assistant professor. Fifth edition. Revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.

SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1937.

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY—Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

THE 1937 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT—Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

THE 1937 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF GENERAL SURGERY—Edited by Everts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

BOOK REVIEWS

MICROBIOLOGY AND PATHOLOGY FOR NURSES

By Charles F. Carter, M.D., Director of Carter's Clinical Laboratory, Dallas, Texas. With 138 text illustrations and 14 colored plates. C. V. Mosby Company, St. Louis, 1936. Price, \$3.00.

While the author of this volume has kept in mind the special requirements of nurses in the preparation of this subject, he has at the same time covered the field thoroughly so that a conscientious student may obtain a very general and complete knowledge of these fundamental sciences.

The first section, devoted to bacteriology, presents a general survey of the entire field, including methods of bacterial study, with special attention to the practical side of disinfection and sterilization. The second part of the book deals with the relation of bacteria to disease, while sections three and four deal respectively with the bacteria of water and milk and special bacteriology. The second main division of the volume is devoted to pathology and presents this subject with sufficient detail for the use of nurses, and at the same time without confusing technicalities.

It is the reviewer's impression that the section relating to bacteriology is more detailed than necessary, unless the training school employing this text provides time and accommodations for elaborate laboratory exercises. The book is adequately illustrated.

R. R. S.

THE LABORATORY DIAGNOSIS OF SYPHILIS

The Theory, Technic, and Clinical Interpretation of the Wassermann and Flocculation Tests with Serum and Spinal Fluid. By Harry Eagle, M.D., lecturer in medicine, Johns Hopkins University Medical School, etc. With a Foreword by J. Earle Moore, M.D., associate in medicine, Johns Hopkins University; physician in charge, Syphilis Division of the Medical Clinic. The C. V. Mosby Company, St. Louis, 1937. Price, \$5.00.

This book, written as it is by a well known authority in the field of serology, represents not only the work of this man but a compilation of the work of many others. In the preface Eagle states, "The importance of the laboratory tests for syphilis increases rather than decreases with the passing years. * * * An intelligent interpretation of the laboratory report by the physician is impossible unless he is familiar with the numerous sources of error inherent in the technic, and unless he is further aware of the exact significance of positive, negative, doubtful, partial, anti-complementary or conflicting reports."

The contents of the book are arranged in a logical sequence and include in the first chapter a general introduction on the activities and physical properties of the reagents to be considered. Part one, consisting of seven chapters, includes a detailed discussion of the physical changes which occur in the

Wassermann reaction, as well as the mode of preparation and standardization of the various reagents used. The second part contains a comprehensive outline of the various flocculation tests which have been proposed, with particular reference to those which have been shown to be useful. Part three is composed of two chapters on the examination of the spinal fluid. Part four deals briefly with a large number of tests for syphilis other than the Wassermann or flocculation methods mentioned, none of which has come into diagnostic importance.

Perhaps the most interesting portion of the book is part five which presents the clinical evaluation of the serologic report. In this chapter Eagle deals with the nature of the reactive substance, the significance of positive Wassermann or flocculation tests, the false positive reactions, and the interpretation of conflicting reports. Part six consists of a number of miscellaneous methods and statistics of serologic technics together with the method which Eagle outlines as the one of choice.

It is, indeed, a comprehensive volume, one which is well and interestingly written and a pleasure to read, and worthy of careful survey particularly by laboratory directors and syphilologists. D. H. K.

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY

Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

The title of this book honestly expresses what it has to offer. Only theoretical principles are dealt with, so that the book is primarily of interest to only the roentgenotherapist and to the research worker who has no interest in clinical work. Of the five contributors, two are physicists and three are radiologists, each of unquestioned renown. The book is a very welcome storehouse of basic facts.

H. W. D.

EYESTRAIN AND CONVERGENCE

By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s6d. net.

This book presents an entirely new conception of eye movements based, not upon the old idea of muscle contraction and antagonistic muscle counter balance, but upon muscle contraction against the elastic primary positional stability supplied by fibrous and elastic tissue. This "tensor system" obtains also in binaural hearing.

The constant action of the converging muscle in overcoming the normal anatomic divergence and counteracted by the elastic stability of the primary position, places the eye in a situation to perform the delicate movements necessary. The unpaired

nucleus for convergence is described as lying in the midbrain in intimate relation with the third nucleus and probably the fourth, on the raphe between the two brain halves. Convergence is given as the basic movement for all possible bifoveal vision even in conjugate deviations, the latter being innervated by the paired nuclei abducentes in the pons. The convergence center maintains its influence in conjugate movements through the action of the superior and inferior obliques which assist the external rectus in producing abversion.

The author presents his first one hundred cases as treated by prism exercises in increasing convergence to a level sufficient to relieve symptoms of eyestrain.

J. H. M.

TREATMENT IN GENERAL PRACTICE

By Harry Beckman, M.D., professor of pharmacology, Marquette University School of Medicine, Milwaukee, Wisconsin. Third edition, revised and entirely reset. W. B. Saunders Company, Philadelphia, 1938. Price, \$10.00.

Since the first edition of this work appeared, eight years ago, it has won a place as a standard reference volume. As in the earlier editions, Beckman hews strictly to the line of treatment for the general practitioner; he wastes neither time nor space on those therapeutic measures which he deems to be the province of the specialists in various fields.

There are several revisions in the classification of disease entities. Those conditions heretofore grouped under "Diseases of Metabolism" now appear in the section on endocrinology and a new division on nutrition and obesity. The arthritides, even gout and osteo-arthritis, are discussed among the infectious diseases, although the author follows the trend of modern opinion in disclaiming an infectious etiology for the latter conditions. Eclampsia is discussed as a disturbance of water balance; the traditional Stroganoff and Rotunda methods of treatment are dismissed with an editorial shrug. In a work which, by its very nature, must be encyclopedic in scope, conservatism is a necessary virtue. Nevertheless, one is surprised to find no mention of administration of the female sex hormone in the treatment of the menopause. The author advises his reader "to spend his memorizing ability, for the present, upon something other than the names of the endocrine products of the competing pharmaceutical houses." Newer trends in therapy are, in general, ably reviewed and summarized. The sections on diabetes mellitus, colon consciousness, and syphilis are outstanding; that on undulant fever, to the Iowa practitioner, appears inadequate.

The author's prose style is forceful, charming, and easy to read. The bibliography is apparently comprehensive, but is placed in its entirety at the end of the book and is without key numbers, which makes it somewhat difficult to use. There is a thorough and efficient index.

H. J. S.

The JOURNAL

of the

Iowa State Medical Society

Vol. XXVIII

MAY, 1938

Number 5

HEMOLYTIC STREPTOCOCCIC SORE THROATS OF MILK-BORNE ORIGIN*

Epidemiologic Observations

THOMAS E. EYRES, M.D., Des Moines

In the United States from 1881 to 1927, 791 outbreaks of milk-borne diseases from various causes were reported to the United States Public Health Service,¹ but many others have occurred.² The seriousness of such outbreaks is clearly shown by those which have occurred in Iowa during the past ten years. From 1928 to 1937, eighteen different epidemics, due to various infectious agents, have been traced to milk. Thirteen of these epidemics were typhoid, three scarlet fever and septic sore throat, and two gastro-enteritis. Seventeen of the epidemics were traceable to raw milk and the remaining one to the improper handling of the supply following pasteurization. These eighteen epidemics produced 1,354 cases of illness and 37 deaths.

An explosive and alarming outbreak of streptococcic sore throat occurred in West Des Moines, Iowa, and a small adjacent area of the city of Des Moines during the fall of 1937. West Des Moines has a population of approximately 4,000, and the contiguous area of Des Moines which was involved numbered 400 people. The patients in this epidemic who developed a skin rash were reported to the County Department of Health, and were subsequently quarantined as having scarlet fever. A total of 180 cases of so-called scarlet fever were reported to the County Department of Health from October 1, 1937, to December 5, 1937. Sixteen cases were reported during October, 148 in November, and sixteen in December up to and including December 5. The attack rate of this epidemic condition in this particular area was sixty-four times greater than the attack rate of scarlet fever in the city of Des Moines proper for the same period.

TABLE I
AGE AND SEX DISTRIBUTION OF 180 CASES REPORTED AS SCARLET FEVER

Age Groups	Cases	Male	Female
Under One Year	1	1	0
1 to 4	29	16	13
5 to 9	36	19	17
10 to 19	46	21	25
20 to 29	28	8	20
30 to 39	27	16	11
40 to 49	6	2	4
50 to 59	6	1	5
60 to 69	1	1	0
70 to 79	0	0	0
Over 80	0	0	0
Totals	180	85	95

As shown by Table I no particular significance was noted in the attack rate as between males and females, but a large number of adults were affected. This is important because scarlet fever is primarily a disease of youth.

CHART I
GRAPH SHOWING DATES OF ONSET BY WEEKS OF 180 QUARANTINED CASES



* Presented before the Des Moines Academy of Medicine and Polk County Medical Society, February 22, 1938.

The onset of the 180 quarantined cases by weeks is shown in Chart I. Twenty-four cases, which had been quarantined were investigated in respect to the milk supply during the early part of November, but at that time milk did not appear to be an incriminating factor. Many new cases, however, were reported, and during the week of November 27 a total of ninety-one were reported and quarantined. The explosive character of this epidemic suggested that it still might be due to some common cause. A complete milk survey was made of the 180 cases and was completed December 8, 1937.

TABLE II
THE NUMBER OF REPORTED AND QUARANTINED CASES OF SCARLET FEVER FROM OCTOBER 1, 1937, TO DECEMBER 5, 1937, GIVING SOURCE OF MILK AND CREAM SUPPLY AND THE AVERAGE DAILY DISTRIBUTION IN QUARTS FOR EACH DAIRY

Dairy	Number of Cases	Daily Distribution Quarts	
		Raw	Pasteurized
A	71	150	...
B	33	...	250
C	11	100	...
D	10	50	150
E	10	100	...
F	7	22	...
G	7	40	...
H	5	120	...
I	3	...	65
J	3	25	...
H	2	110	...
L	1	11	...
M	1	6	...
Grocery Store	16		
Total	180		

The results of this survey showed that seventy-one (39.4 per cent) of the patients used milk and cream from Dairy A; thirty-three (18.3 per cent) used Dairy B supply. The daily distribution in quarts of Dairy B was 66.7 per cent daily more than Dairy A, and since Dairy B was a pasteurized supply, it was felt that Dairy A, which was a raw milk supply, might be at fault. The sixteen patients who had purchased their milk from the grocery stores could have obtained the milk produced by all the dairies listed in Table II, except

that from Dairies L and M. Dairy A supplied milk and cream to five grocery stores, one restaurant and one drug store.

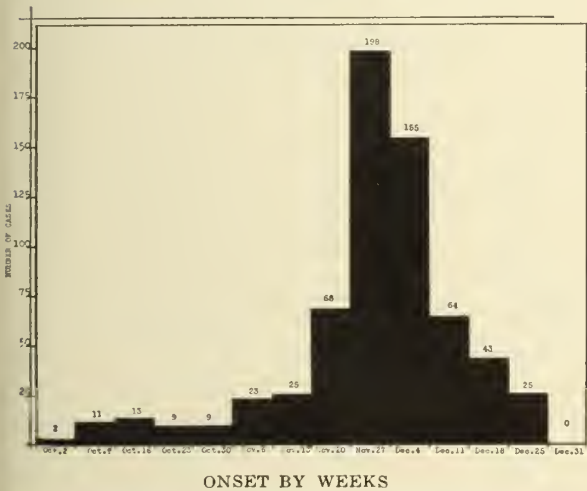
On December 11, 1937, the herd of Dairy A was examined by veterinarians from the State Bureau of Animal Industry. Seven out of a herd of fifty-nine milking cows were found to have physical evidence of mastitis. Milk samples were collected from these affected udders for bacteriologic study. Four of the seven samples revealed the presence of hemolytic streptococci after twenty-four hours incubation on blood agar plates. The seven cows were removed from the herd on December 12, and beginning on December 13 the remaining milk supply was pasteurized. The removal of these seven cows from the herd was followed by a sudden drop of reported scarlet fever cases. The herds of all the raw dairies, which were supplying milk to this community were examined for evidence of mastitis, and bacteriologic analyses were made on all suspicious samples. However, no evidence of pathogenic bacteria was found in any of the samples submitted.

The streptococcic cultures, which were isolated from the four cows of Dairy A, along with cultures isolated from the throats of several patients, were studied further. It was found that three of the four milk samples contained *Streptococcus agalactiae*, the organism commonly found in streptococcic bovine mastitis, while the remaining milk culture revealed the presence of *Streptococcus pyogenes*, the organism which appeared identical with the human cultures. These data, along with the epidemiologic evidence, helped to establish this epidemic as one initiated by raw milk, probably from one cow. The offending cow had been milking for a period of seven months. History of any illness or hand infections among employees of this dairy was entirely negative and repeated throat cultures on these same individuals were also negative.

During the course of this epidemic it was apparent that many persons, ill of this infection, were not under medical supervision. To obtain more detailed information as to the extent of this epidemic, a survey was made of 1,154 of the 1,206 homes in this vicinity. In cooperation with the Des Moines City Health Department, the Public Health Nursing Association and the Iowa State Department of Health, eight public health nurses were secured for this work. The survey was begun on December 18, 1937, and completed on December 31, 1937, and included 4,239 persons. The fifty-two homes from which data were not secured were either vacant or the occupants declined to cooperate. From this survey was obtained the household roster, the age, sex, color,

occupation and a history relative to fever, adenitis, sore throat, rash, date of onset, date of recovery, gatherings attended, meals away from home, exposure to known or suspected case of illness, and person days of quarantine from October 1 to December 31, 1937. The source of the milk cream, ice cream, butter and cottage cheese was obtained. The source of milk and cream was recorded as regular, occasional, raw or pasteurized. Some families took milk and cream from more than one source and in these cases each dairy was given credit for the number of individuals in the family.

CHART II
GRAPH SHOWING DATES OF ONSET BY WEEKS OF
645 SURVEYED CASES



A total of 645 people (15.3 per cent) of the population surveyed, gave a history of one or more of the following symptoms: sore throat, adenitis, rash and fever during the period October 1, 1937, to December 25, 1937. The peak of the epidemic was reached during the week of November 27 when 198 new cases developed. At that time many persons who ordinarily used other supplies, purchased cream from Dairy A for their Thanksgiving dinners. This no doubt was largely responsible for the sudden increase during that particular week.

Table III presents a clear picture of the range of age groups. The large number of adults who were affected suggested a type of infection not limited to childhood. Sore throat was by far the most common clinical symptom, being present in 585 of the 645 cases. It is also observed that rash was much more frequent among children and young adults than older people. In the age group of nineteen years and under, it was present in 53.44 per cent and in those twenty years of age and over, rash developed in only 23.64 per cent of those ill. It is assumed that the lower incidence of this manifestation among adults is due to desensitization of this fraction of the population by some previous streptococcic infection.

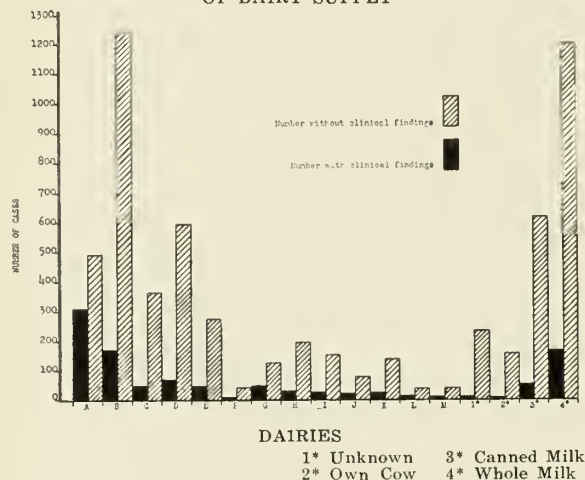
A total of 3,594 persons escaped the illness while 645 were in some manner affected. Statistical analysis of this data (Chart III) shows that 312 had at some time used the raw supply of Dairy A and had subsequently become ill, while

TABLE III
DISTRIBUTION BY AGE, SEX, COLOR, CLINICAL SYMPTOMS AND SIGNS

Age Groups	Cases	Sex		Race		Cervical Adenitis		Sore Throat		Rash		Fever
		M	F	W	C	No.	%	No.	%	No.	%	
Under one	5	2	3	5	0	3	60.0	3	60.0	3	60.0	5
1-4	67	32	35	67	0	37	55.2	52	77.6	52	77.6	60
5-9	114	49	65	114	0	50	43.8	97	85.0	67	58.7	94
10-19	162	65	97	154	8	64	39.5	153	94.4	64	39.5	105
20-29	96	30	66	93	3	47	48.9	92	95.8	28	29.1	62
30-39	79	28	51	77	2	44	55.6	75	94.9	28	35.4	61
40-49	57	25	32	56	1	26	45.6	52	91.2	7	12.2	36
50-59	45	17	28	45	0	19	42.2	43	95.5	6	13.3	28
60-69	19	10	9	19	0	6	31.5	17	89.4	1	5.2	11
70-79	0	0	0	0	0	0		0		0		0
Over 80	1	0	1	1	0	1		1		0		1
Totals	645	258	387	631	14	297		585		256		463

495 (61.3 per cent) who used the same supply escaped. Dairy B, a pasteurized supply, had a daily distribution of 66.7 per cent more than Dairy A. Dairy B had 1,244 (88.9 per cent) consumers who escaped and 168 who became ill. From an epidemiologic and statistical standpoint, this num-

CHART III
NUMBER OF INDIVIDUALS WITH AND WITHOUT CLINICAL SYMPTOMS ACCORDING TO THE SOURCE OF DAIRY SUPPLY



ber who escaped infection is very important. With only statistical data upon which to work, one would be inclined to exonerate all the dairies except Dairy A as playing leading rôles in this epidemic.

Although the principal cause of this epidemic was apparently found and eliminated on December 12, a marked decline in the number of new cases was observed immediately following the week of November 27. Two factors were believed to be responsible for this early decline. Some families had begun to boil their milk supply regardless of the source on warning from their physicians that milk was under suspicion, and others had changed from raw to pasteurized milk. Sixty-four of the 645 patients gave a history of eating meals in the local restaurants, at church or at club dinners during some phase of the epidemic, and 93 gave a history of eating out of town. Eighty-eight persons had contact with known cases. Person days of quarantine numbered 8,541. Streptococcic epidemics of this magnitude are often accompanied by some mortality, but fortunately in this instance there were no deaths.

Most streptococcic bovine mastitis is caused by *Streptococcus agalactiae*, frequently called *Streptococcus mastitidis* and is considered non-pathogenic for man. However, cases are occasionally caused by hemolytic streptococci, apparently of human origin and transmitted to the udder from the infected throat or hands of the milker. This

type of bovine mastitis presents a very important problem in preventive medicine, since it is occasionally responsible for serious outbreaks of septic sore throat and scarlet fever. In addition to this there is the perennial danger of other milk-borne diseases. *Staphylococcus* organisms in milk from cows with mastitis have caused many outbreaks of gastro-enteritis. Bovine tuberculosis must be continuously guarded against and undulant fever is an ever present danger to users of raw milk.

Complete elimination of milk-borne epidemics could be accomplished if all milk was properly pasteurized and properly handled, since there is no record of an epidemic of any kind or description traced to milk so treated. We find problems in sanitation at points of production and distribution. Even properly handled, raw milk represents an unpredictable hazard to the health of the community. Pasteurization should not be considered a substitute for proper milk production, but it is an important precautionary measure in making milk safe for human consumption. Physicians are in a position to render true service to their communities by supporting enactment of ordinances which insure clean production, proper pasteurization and safe handling of milk supplies. The epidemic discussed in this paper presents a very good example of what an infected milk supply can do. Milk, as we all know, is our best food, yet it may be one of the most dangerous.

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Your State Medical
Society Is Meeting
in Des Moines

May 11, 12 and 13, 1938

MILK-BORNE STREPTOCOCCIC SORE THROATS*

Clinical Observations

FRED STERNAGEL, M.D., West Des Moines

During this epidemic 195 cases were observed clinically. Of this number 60 were children and 135 were adults. The distribution of these cases during the period when the epidemic was at its height is shown in Figure 1.

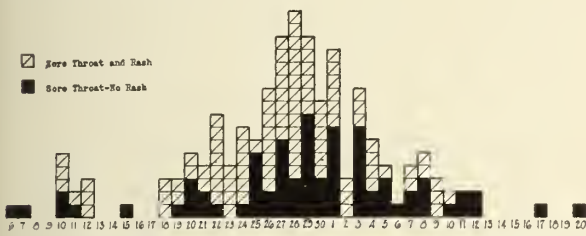


Fig. 1. Diagrammatic representation of cases as observed clinically from November 6 to December 20, 1937.

The general symptoms were those of a severe sore throat. These are recorded in Figure 2.

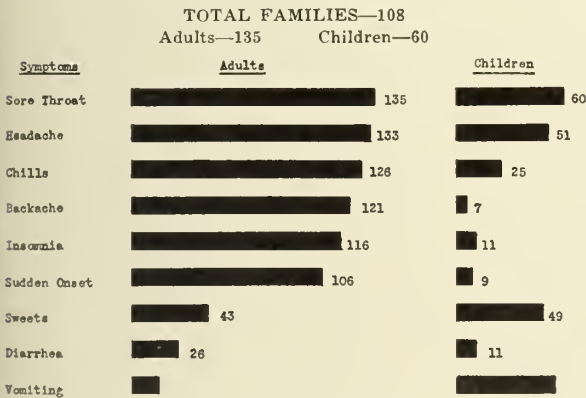


Fig. 2. General symptoms.

From the history obtained in several cases, the incubation period was definitely about three days following the ingestion of milk or cream containing the infecting organism.

The onset, particularly in adults, was sudden. Patients became ill over night. The early diarrhea, vomiting, chills and backache were of short duration, they lasted about one day and seldom required treatment. All the above complaints were of minor consequence compared to the sore throat, which was common to all alike. In children this symptom was present but less striking. The pain was more laryngeal in character than faucial, but the vocal cords were not affected. Swallowing was extremely painful and often impossible. Saliva and other secretions drooled from the corners of the mouth. Most patients pre-

ferred to lie with their heads over the sides of the bed, thus allowing secretions to fall into a receptacle on the floor. Food, water and medication were taken reluctantly because of the pain attendant on swallowing.

Extreme or even mild toxemia was little in evidence. The patients were rational, alert, sometimes up and about. Hysterical individuals, because of the continuous prolonged throat discomfort, occasionally presented alarming symptoms not substantiated by findings. Physical findings were essentially those of an uncomplicated case of severe sore throat.

A few observations characteristic of this particular epidemic are worth mentioning. The pulse rates in all patients were unusually high, averaging about 120, although rates as high as 150 were encountered on occasions, especially in the younger group. A dicrotic pulse occurred in nine patients after the third day of more serious illness than the average, and disappeared with recovery. The fever ranged around 102 degrees, and was somewhat irregular until it subsided. (Figure 3.)

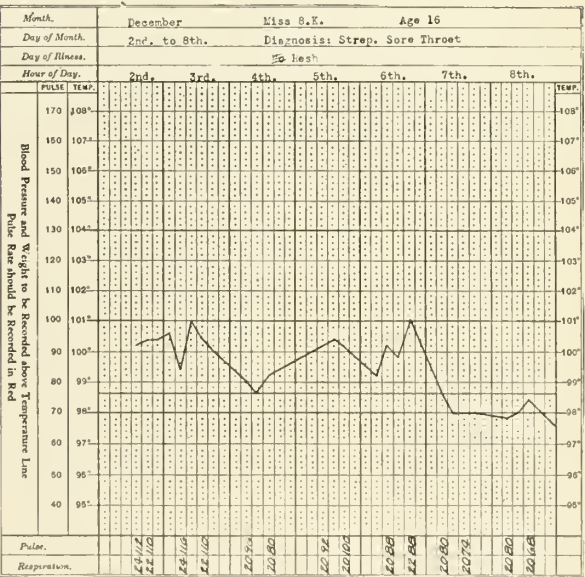


Fig. 3. Typical case of sore throat and rash.

From one hour to four days after the onset in 49 children and 68 adults, an erythematous body rash, varying in intensity, made its appearance, first on the back and the sides of the abdomen. Later it spread over the chest, down the medial aspects of the thighs and arms, many times covering the whole body, but rarely involving the head or face. A mild pruritus often accompanied the rash. The redness was fleeting, usually disappearing in twenty-four hours. The Schultz-Charlton blanching test done on eighteen patients at the

* Presented before the Des Moines Academy of Medicine and Polk County Medical Society, February 22, 1938.

height of the rash was negative in every case. Superficial desquamation usually began on the fifth or sixth day of the illness. It was most noticeable around the finger nails and palms of the hands, and when present on the body was branny in character and not easily seen. Desquamation often continued for one or two weeks. Patients with this rash were classified as having had scarlet fever, yet this was the only feature differentiating them from other co-existing cases with an apparently identical illness except for the rash. When the illness was accompanied by a very severe sore throat and when it was prolonged, a crisis-like phenomenon was observed. The throat pain would suddenly disappear and the patient would begin to sweat profusely. Recovery was rapid from this point. This phenomenon was observed repeatedly in severe cases and to a less striking degree in the milder forms of the rash, varying in intensity, made its appearance. illness.

The great majority of the victims of this epidemic had an acute illness of very short duration, averaging from two to three days. Remissions after one or two days were noted in sixteen cases. Four patients in this series, however, had illnesses continuously for at least ten days. Convalescence as a rule, was not stormy, but slow, often requiring a month before recovery was complete.

FIG. 4. THROAT TYPES OBSERVED

Type 1	Type 2
Mucosa shiny and red	Mucosa dull and gray
Throat not swollen	Throat much swollen
Pillars unchanged	Pillars extremely swollen
Tonsils covered with exudate	Tonsils rough and swollen
Uvula elongated and swollen	Uvula shortened and pushed back
Tongue coated early, later beefy	Tongue coated and changed little
Mouth opened without difficulty	Mouth not opened over an inch
Temperature, average 102°	Temperature, average 103°
Body rash in 73% of cases	No body rash
Course two to three days	Course three to ten days
Pain disappeared by lysis	Pain disappeared by crisis
Recurrence uncommon	Recurrence common
Rare cervical adenopathy	Cervical adenopathy common
Children and adults	Adults only
Previous scarlet fever in 5%	Previous scarlet fever in 28%

The appearance of the throats in this epidemic was so interesting that your attention is called to a few observations. Two clinical types of throats were in evidence from the beginning. These throats were associated in some manner. Both types occurred in different individuals sick at the same time and in the same family. Organisms with the same cultural characteristics were demonstrated in all throats regardless of their appearance. A few of the outstanding features of both types are outlined in Figure 4. We have designated them respectively as Type 1 and Type 2. The distinction, in many cases, was not as clear as here outlined; nevertheless sufficient numbers

of the different appearing throats were observed concurrently to make the following deductions.

The throat of Type 1 was strikingly red, easily examined and little if any swollen. The uvula was elongated, edematous and shiny. The tonsils and lymphoid follicles were often covered with patches of a thin gray exudate which wiped off with ease and left no bleeding. The tongue was thickly coated, the red papillae barely showing through the light colored coating. Clearing of the tongue began after a few days, first on the tip and sides, leaving a slightly reddened smooth surface. This type of throat was observed both in children and adults.

The throat of Type 2 presented an entirely different appearance. Examination was difficult because of the patient's inability to open his mouth. The mucous membranes were gray and lusterless. The pillars were so edematous that a view of the tonsils was almost impossible. The uvula was small and pushed backward and upward by the huge swollen pillars. The tongue was swollen, thickly coated and changed little as the illness progressed. These cases resembled in appearance, bilateral peritonsillar abscesses. Early in the epidemic an attempt was unwisely made to open one of these swellings, in the expectation of finding pus. A bloodless woody field was observed between the blades of the hemostat and no pus was in evidence. Patients who had had "quinsy" in previous years insisted that they were suffering a recurrence. Alarming adenitis of the posterior cervical glands was common following this type of sore throat. The swelling always subsided in from one to two weeks without suppuration.

The records and observations tend to indicate that the throat of Type 2 was identified only with the epidemic period proper. The throats described under Type 1 have been seen in a few scattered instances before and after the epidemic but the incidence was greatly increased during the epidemic. Both types of throats were perhaps only different tissue responses to the same or similar invading organism. However, it will be noted that 28 per cent of the patients who had Type 2 throats, gave a history of having had scarlet fever in the past; and that patients with the Type 2 throat never developed any body rash. The pain and discomfort was about the same in both types.

Two hundred and ninety cultures were made from throats over a period of six weeks during and after the epidemic. The method used was essentially that of collecting the sample on a sterile cotton swab which was then transferred immediately to beef broth extract media at room temperature. These cultures were later plated on

blood agar. By this method the presence of hemolytic streptococci was easily demonstrated in the throats of patients ill with the disease. Likewise contacts in the home and many individuals with no sore throat or apparent history of exposure, had throats which yielded hemolytic streptococci. At the height of the epidemic positive throat cultures were obtained from almost every person in town who submitted to the procedure. These throat cultures had a tendency to become negative and remain so after from three to seven days, if the family was quarantined or otherwise isolated and when the milk supply was not under suspicion. On the other hand in those quarantined families whose milk supply was from one particular dairy, periodic remissions of positive throat cultures were noted until the end of the epidemic. Two newborn babes being fed on evaporated milk formulae and aged four and six months respectively, deserve mention in our culture observations. Both of these babes confined in quarantined homes were being attended by persons who showed positive throat cultures, but were otherwise well. Their mothers, with other individuals in the family were ill with sore throats. During a period of about a week, while the other throats in the households of these babes were repeatedly positive for streptococci, cultures of these infants' throats never revealed any suspicious organisms.

Thirty-seven cases of this series, regardless of whether they developed a body rash or not, were Dick tested on recovery. All the tests were negative. Complications in this series were relatively few. There were four cases of otitis media; one case of mastoiditis; one case of mild infective arthritis lasting two weeks; one endocarditis; one suppurative adenitis; and one possible osteomyelitis of the hip. Two cases of erysipelas of the head appeared during this period, but in neither instance was there a history of antecedent sore throat.

Sulfanilamide as a prophylactic against the disease in daily forty grain doses was used in 142 exposures. Two of these so treated became ill after having taken this dose for at least five days. Convalescent immune scarlet fever serum was used in doses of twenty cubic centimeters intramuscularly for the same purpose in fifty-two cases, and out of this number three developed the disease in five, eleven and fourteen days respectively after the administration of the serum. One patient eventually developed mastoiditis. Sulfanilamide therapy was used extensively in 72 instances and an equal number were observed as controls. One hundred and twenty-five grains were given daily to adults and proportionally less to children. The

maximum dose was continued for two days, then the amount given was gradually reduced daily until by the end of seven days it was discontinued unless recovery intervened. The evaluation of this type of therapy was necessarily difficult because of the extremely short period of the acute illness. However, in most instances the results obtained, particularly in the cases of longer dura-

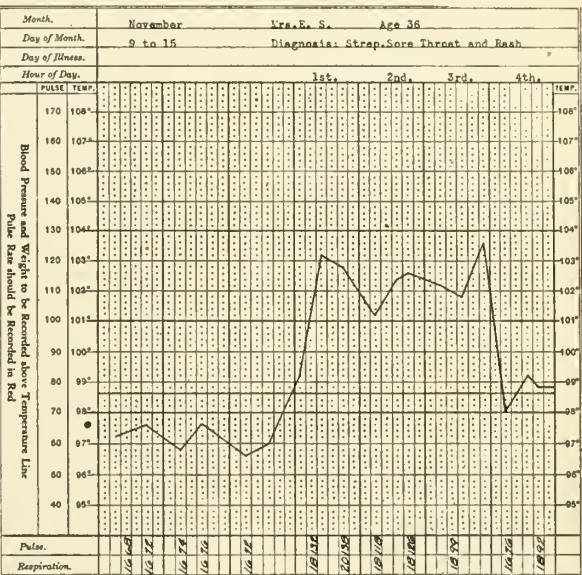


Fig. 5. Appendectomy case ill on third day after arriving home from hospital. Given convalescent scarlet fever serum on third day of illness at 1 p. m.

tion, did not justify the claims made for sulfanilamide in the hemolytic streptococcus infections—at least not for this particular type. The two cases of erysipelas encountered, responded beautifully to sulfanilamide. It will be noted that the dose of sulfanilamide used, according to present standards, was heavy. In spite of this large dosage, there was not a single untoward reaction worth mentioning. Hypodermic sulfanilamide therapy was not used.

Therapeutically, convalescent human immune scarlet fever serum in doses of 80 cubic centimeters intravenously was tried in sixteen cases of varying severity with and without a rash from one to three days after the onset. The response, as judged by improvement both subjectively and objectively, was particularly gratifying. Serum and other reactions as a result of the intravenous use of this serum, were entirely absent. (See Figure 5.)

CONCLUSIONS

1. Unprecedented numbers of severe sore throats in adults and atypical body rashes in children, appearing for six weeks prior to a sudden

outbreak of sore throats suggested a common cause.

2. The outstanding picture was that of an unusual number of adults ill with severe sore throats, these throats often resembling peritonsillar abscesses.

3. Convalescent human immune scarlet fever serum given intravenously was found to be the only effective therapeutic agent in all types of cases.

SOME ASPECTS OF FEVER THERAPY*

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For the past two years, the newspapers and national magazines have given a great deal of space to a "new" form of medical treatment called fever therapy. Needless to say, these articles have been overly optimistic, and in their enthusiasm have left the impression that a large variety of diseases can be alleviated or cured by the new method. As a matter of fact, fever therapy is not new and is useful in only a limited number of ailments.

The concept that fever could be used to combat disease can be traced to the dawn of written history. Hippocrates, who lived in the Fifth Century, B. C., stated "Give me the power to produce fever, and I will cure all disease." Ruphos of Ephesus, about 5 A. D., wrote "If physicians were able to produce fever, no other method of treatment would be necessary." Both of these ancient physicians used heat as a form of treatment for many ailments, especially gout and rheumatism. More than 4,000 years ago, the Chinese employed heat extensively as a means of combating disease. Later, the Japanese who learned most of their medicine from the Chinese, used the hot mineral springs at Kusatsu for the treatment of such diseases as syphilis, arthritis, gout, and similar ailments. The water from these thermal springs which issued from volcanic formations at temperatures varying from 100 to 160 degrees F., was run into small individual tanks. If the temperature was too hot for a particular bather, the water was stirred with a large paddle until it was sufficiently cool. The patient then immersed himself up to his neck for from three to six minutes when he emerged "red as a beet." This method of "boiling oneself" was repeated three or four times a day.

Sweating has long been a favorite remedy among primitive peoples. The Carolina Indians used hot mud holes for treating various diseases

of the extremities. William Penn, in a letter to Dr. Edward Bayard, a fellow of the Royal College of Physicians, described how an Indian chief obtained almost immediate relief from an illness after the use of a hot vapor bath. Arthritis, neuritis, and rheumatism were also common among the early American settlers, and the sweat bath was a favorite remedy. We can all recall the mustard baths, hot poultices, and vapor baths our grand mothers foisted upon us at the slightest sniffle.

Scientific fever therapy started with the publication of the memorable work of Dr. Wagner von Jauregg in 1918. He noticed that many people who were incurably insane, especially those suffering from dementia paralytica, or syphilis of the brain, sometimes became sane if they developed a high fever from pneumonia or malaria. This observation was not new; Hippocrates was acquainted with the beneficial effect of malaria in epilepsy, and 160 cases of the good results of malaria treatment in the insane had been recorded in medical literature before the work of Wagner von Jauregg. However, the writings of this Viennese physician helped to popularize fever therapy and bring it to the attention of the general public. He inoculated malaria into insane individuals suffering from syphilis of the brain and after several bouts of chills and fever, many were improved and some patients were able to return to a useful life.

In January, 1928, W. R. Whitney, a General Electric engineer, was experimenting with a new high powered short wave radio tube for long range radio transmission. Whenever this tube was used it was noticed that the men in the laboratory developed headaches, dizziness and other discomforts. A physician who was called in found that the body temperature was raised two or three degrees after a half hour exposure to the waves from the new radio tube. Whitney, knowing of the work of von Jauregg, soon found by animal experimentation that short radio waves could raise body temperature without injury to the tissues.

At the present time there are many ways of producing artificial fever. Malaria is still widely used in the treatment of syphilis of the brain and spinal cord. In this form of treatment the patient is inoculated with blood from an individual having malaria. About five days later the patient develops a fever ranging from 105 to 107 degrees F. and ending in a severe chill. The cycle of fever and chill terminating in a profuse sweat usually lasts from four to six hours. This method of producing artificial fever, although yielding excellent results, has many disadvantages. The degree of

*From Department of Internal Medicine, State University of Iowa, College of Medicine. Originally prepared as a radio presentation of the Iowa State Medical Society, and broadcast over WOI and WSUI, November 3, 1937.

fever produced cannot be controlled and sometime may rise high enough to cause convulsions, unconsciousness, or even death. Malaria, being in itself a severe and dangerous disease, may weaken the patient to such an extent that the fever treatment cannot be continued. This form of therapy must be carried out in a hospital where there are enough patients receiving treatment so that the strain of malaria can be continued, and where the physicians are able to cope with any emergencies or complications that may occur.

The inoculation of killed typhoid bacilli into the blood stream is another favorite and useful method of producing fever. Vaccines containing killed typhoid and paratyphoid bacilli are injected into a vein, usually starting with 25,000,000 organisms. About one or two hours later the patient's temperature rises and later there is a chill. This is repeated a few days later, a larger dose of organisms is used (about 50,000,000 to 75,000,000), providing the first inoculation caused no undue symptoms. Typhoid inoculations rarely cause a rise in temperature to more than 103 degrees and the fever lasts only a short time. Boiled milk injected into the muscles is also used but is less effective than typhoid vaccine. Other substances injected into the muscle, such as colloidal sulphur and turpentine, have been used, but these are extremely painful and may cause abscesses at the site of inoculation.

Following the discovery of Whitney that short radio waves could produce fever, a large assortment of machines were manufactured for the treatment of disease. Most practical and safest of these machines is the inductotherm. This is a vacuum tube oscillator, generating an alternating current with a frequency of approximately 12,000,000 cycles per second. The current is conducted through a flexible, heavily insulated cable which is wound into a pancake type of coil to be placed over the patient. With this machine the body temperature can be elevated slowly or rapidly to any degree desired and can be stopped at will so that the temperature can be easily controlled. To prevent the loss of body heat and keep the temperature curve even, the patient is wrapped in blankets and placed in a large rubberized zipper bag with only the head and neck exposed. Many patients object to being kept in a bag which limits their movements and adds to the discomforts of the treatment. To overcome this objection, Charles Kettering, of the General Motors Corporation, experimented with air-conditioned boxes in which the patient had freedom of movement, and in association with Dr. Walter Simpson of Dayton, Ohio, soon devised a cabinet

in which the heat could be produced from any heating unit, either by radio waves, or electric lights, or electric heating units. Soon various boxes, using carbon lamps, infra red units, electric lights and other devices to supply heat, appeared on the market or were home made.

Since artificial heat has received such unrestrained publicity, the lay public has gained the impression that anyone can take such treatments at any time. A description of the procedure as carried out at the University Hospital will dispel such erroneous ideas. Before the patient is given a treatment he is carefully examined so we are sure he is not suffering from tuberculosis, high blood pressure, heart disease, or other debilitating diseases. If the physician in charge of the fever treatment believes the individual can withstand the treatment, the patient is hospitalized the night before and is kept in bed. On the morning of the treatment, breakfast is withheld. The patient is wrapped in a blanket and the legs and feet are encased in cotton to prevent injuries to the toes. When the patient is comfortable, the current is turned on. The body temperature is raised slowly at first, and then more rapidly so that at the end of sixty to eighty minutes the rectal temperature has reached 105 to 106 degrees F. From then on the rectal temperature is taken every five to ten minutes, and is maintained between 105 and 107 degrees F. for five to six hours, depending on the disease for which the treatment is given. Throughout the stay in the cabinet, an electric fan is played on the patient's head, the attending nurse keeps moist cool compresses on the forehead, and urges him to drink plenty of water to which salt has been added. At times the patients become excited and even delirious and must be given sedatives.

The most important part of the treatment is the nursing care. A well trained nurse can, by handling the patient properly, keep him quiet and cooperative with the minimum amount of sedatives and can thus decrease the dangers of the high fever. At times she may just talk to him, at other times she will sing or read but she is always keeping him quiet and comfortable. Besides this she must be able to recognize dangerous symptoms as they occur and be able to meet and help in all emergencies. At no time during the treatment must the patient be left alone even for a few seconds and arrangements must be made to relieve the nurse when she must leave the room. A physician must be available at all times and that means within calling distance from the room where the treatment is given. After the body temperature has been kept at the proper level for the desired

length of time, the heat is turned off, and the patient is removed from the box and placed on a comfortable bed. He is kept here covered with light blankets until his temperature has returned to normal. Then, and only then, is he returned to his room and given a light meal, usually milk. The treatment lasts practically all day, from eight to ten hours being consumed in carrying out the complete procedure.

From this explanation it can be seen that artificial fever therapy is a most strenuous type of treatment, which to be safe must be given in a hospital equipped with trained nurses or technicians, supervised by a physician with some training in its use. Patients to be treated with fever should be selected with as much care as are patients who are to undergo a major surgical operation.

The ordinary disease producing germs can be killed by heating over a long period of time at a high temperature. Only two of these are so fragile that they cannot withstand as much heat as a human being. The spirochete that causes syphilis and the gonococcus that causes gonorrhea, are destroyed at relatively low temperatures and consequently these diseases have been widely treated by artificial fever. The results have not been as good as expected because the bacteria harbored in the body are more heat resistant than those in a test tube. Artificial fever also helps all the defense mechanisms of the body to function better and more efficiently.

During the past few years fever treatment has been recommended for no less than fifty different diseases. We now know that its use is very limited and that the best results are obtained in gonorrhea, and its resultant afflictions. In order to evaluate the results obtained at the University Hospital, we sent questionnaires to the patients treated before January, 1937. One hundred and fifty-nine (159) patients responded and the results are shown in Table I.

TABLE I
RESULTS OF FEVER THERAPY
Total Number of Patients Treated—159

RESULT	NUMBER	PER CENT
Unimproved	51	32.1
Fair	21	13.3
Good	87	54.6

It was hoped that fever treatment would be of benefit to those suffering from arthritis. Under the heading of arthritis (Table II) there are two large groups of what are commonly called rheumatism; first, hypertrophic arthritis, which comes

with advancing age, and second, infectious arthritis, usually thought to be due to some focus of infection. Unfortunately, patients suffering from these two forms of arthritis derive very little

TABLE II
RHEUMATOID ARTHRITIS
Number of Patients—28

RESULT	NUMBER	PER CENT
Unimproved	9	32.1
Fair	4	14.2
Good	12	42.9
Excellent	3	10.7

benefit from the treatment. At the University Hospitals we followed twenty-eight arthritic patients over a period of several years after the treatment was given. About fifty per cent of these patients reported slight improvement while only a few were greatly benefited. About thirty per cent showed no improvement or were worse. Those patients with hypertrophic or senile arthritis had the poorest results, while those with infectious arthritis seemed to derive the most benefit.

When electrically induced fever was first used, it was reported that patients suffering with multiple sclerosis (Table III) could be helped. This

TABLE III
MULTIPLE SCLEROSIS
Number of Patients—22

RESULT	NUMBER	PER CENT
Unimproved	16	72.7
Fair (?)	3	13.6
Fair	3	13.6

is a chronic disease of the central nervous system of unknown origin which causes weakness of the limbs and paralysis. It is now recognized that fever therapy has no effect on the progress of this disease. Among twenty-two patients with this disease only three derived questionable benefit while all the others were unimproved.

Chorea, or St. Vitus dance, has been treated with fever therapy and, according to some observers, the results are encouraging, although others have not noted any consistent improvement.

Syphilis is caused by an organism called the *Spirochaeta pallida* which can be killed outside of the body at a temperature ranging from 102 to 105 degrees F., maintained from three to five hours. The course of syphilis is divided into three pe-

riods; namely, the primary, secondary and tertiary stages. The first two stages occur soon after infection and represent the early lesions, during which fever treatment is of little value. Following these manifestations a latent period ensues and, after a lapse of years, the tertiary stage develops. At this time symptoms may appear indicating involvement of the brain and spinal cord, with the development of locomotor ataxia or insanity. Fever therapy has given some excellent results in these late neurologic lesions. In addition to fever treatment the patient must also receive drug therapy with arsenic and bismuth, or better yet, a combination of malaria and drug therapy with artificially induced fever. At the University Hospital, this combined method has been employed using all three forms of treatment. A large number of treatments have been given for dementia paralytica or syphilis of the brain. By questionnaires it was possible to follow the course

TABLE IV
SYPHILIS*
Number of Patients—29

RESULT	NUMBER	PER CENT
Unimproved	11†	37.9
Fair	3	10.3
Good	15	51.7

*Neurosyphilis, 20; paresis, 9.
†Five patients had been committed to state institutions. Three have since died.

of twenty-nine such patients. (Table IV.) More than half of these individuals reported good to excellent results. Three of those who were unimproved have died, while five others had to be committed to an insane institution. Several of the patients who obtained good results are now able to work full time and are self-supporting.

Gonorrhea is the one disease that can be said to yield to artificial fever therapy. The gonococcus which causes this disease can be killed outside of the body by a temperature of 106 degrees F. maintained for one hour. This amount of heat will kill about ninety-nine per cent of the various strains of gonococci. Dr. Desjardins of The Mayo Clinic has reported that raising the body temperature to between 106 and 107 degrees F. for five hours, and repeating the procedure from two to five times at intervals of two or three days, destroys the micro-organisms and rids patients of the infection in a large proportion of cases. Of the many cases treated at the hospital it was possible to follow twenty-two patients suffering from various types of gonorrheal infection. (Table V.)

Many of these patients had gonorrheal arthritis alone or in association with other gonorrheal lesions. Only one had no permanent benefit. It was most interesting that only a few had good re-

TABLE V
GONORRHEA*
Number of Patients—22

RESULT	NUMBER	PER CENT
Unimproved	1	4.5
Fair	3	13.6
Good	8	36.3
Excellent	10	45.5

*Including all but eye complications.

sults while a majority of the patients reported excellent results or what they thought was permanent relief. In general, the results of fever therapy for gonorrhea in various anatomic sites have been excellent.

There is another group of individuals who showed remarkable results. (Table VI.) The

TABLE VI
DISEASES OF THE EYE
Number of Patients—47

RESULT	NUMBER	PER CENT
Unimproved	11	23.4
Fair	8	17.0
Good	28	59.6

patients in this last group have suffered with infections of the eye. In all, forty-seven patients were treated for various conditions ranging from infections due to foreign body in the eye to gonorrheal ophthalmia. About one-third had gonorrhea involving one or both eyes, and only one, a baby, was unimproved. Less than one-fourth of all the patients given artificial fever for eye lesions remained unimproved, but the results were better than it would appear since the majority of these had conditions which made it impossible to judge the effect of treatment. In many of the patients having good results, vision was improved or the eye itself was saved, which justified all the discomforts the patients underwent during treatment.

One cannot leave the subject of artificial fever therapy without mentioning some of the complications which may arise. As stated at the beginning of this talk, many of the magazines and newspapers have given glowing accounts of the

cures that may result, but none mentions the difficulties that may arise from the treatment. Strangely enough, burns practically never appear if the treatment is given properly. Headache usually develops during the treatment but abates within a few hours. Nausea and vomiting occur rather frequently but usually cause little discomfort. Very often patients complain of marked weakness which may persist for some time after the treatment. Fever sores appear around the lips in many patients while a few complain of severe pain under the ribs. Unfortunately this latter distressing symptom may continue for several weeks. The death rate from this form of therapy is 0.3 per cent or less. This is a very low rate when compared with malaria treatment, but it is important enough to make us realize that artificially induced fever unless properly given and supervised, may be dangerous and can only be given in a hospital or well organized fever clinic.

To date, fever therapy is chiefly of value for the venereal diseases, gonorrhea and syphilis. Whether it may prove beneficial in other conditions remains to be seen. This can be demonstrated only if the treatment is carried out under well controlled conditions and by people who are neither too optimistic nor too pessimistic.

A complete bibliography on this subject will be included in the author's reprints.

THE MODERN TREATMENT OF URINARY INFECTIONS

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Infections in the urinary tract confront all practitioners of medicine with a much greater regularity than do other problems in the field of urology. They interest alike the physician and the pediatrician, the surgeon and the obstetrician, and they urgently require treatment. Fortunately great advances have been made in recent years in the treatment of these infections which have been such a frequent source of distress to both the patient and his physician.

Intelligent treatment of urinary tract infections requires a preliminary correct diagnosis, and it is precisely here that most practitioners are separated from further pursuit of modern therapy. The urologic classification of the infecting organisms into the *Salmonella*, *Shigella*, *Proteus ammoniae*, *Streptococcus fecalis*, *Staphylococcus aureus*, *Escherichia coli*, and *Aerobacter aerogenes* is likely to be confusing, and is not essential for successful treatment by modern methods. It is, however, necessary to identify the infecting organism as to whether it is a bacillus or a coccus and to determine the amount of pus in

the urine. Having made those two relatively simple observations, one is prepared to proceed with the treatment.

A specimen of urine is obtained from the patient suspected or known to be suffering from an infection of the urinary tract. If the patient is a male, a passed specimen is sufficient; if a female, a catheterized specimen is required, since a voided specimen frequently contains pus cells and organisms which are not present in the bladder urine. The urine is placed in a test tube and centrifuged for five minutes, after which the supernatant fluid is poured off and the sediment placed on two slides. A cover slip is placed over one, and while the urine is still wet it is examined under the high powered lens of the microscope. The number of pus cells present in a high powered microscopic field is used as the criterion of the degree of infection. Less than five pus cells are not clinically significant, but as few as ten or fifteen cells may be present at the time of a clinically important infection. In the more active infections as high as two hundred and fifty pus cells may be found in a single microscopic field. The drop of sediment on the other slide is dried and stained.

The gram stain is not only one of the most useful bacteriologic tests ever devised, but, con-

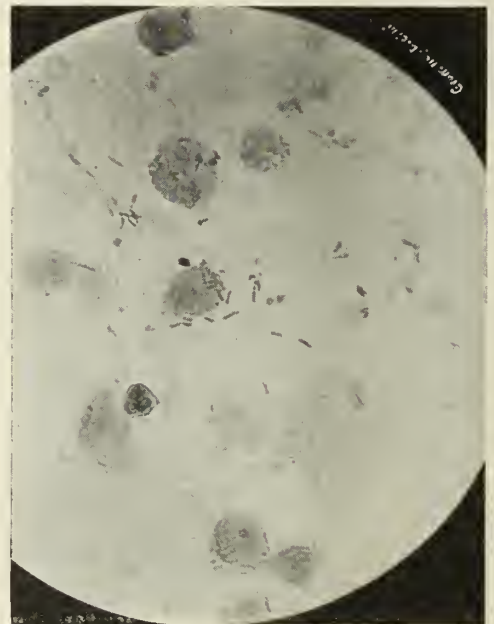


Fig. 1. Bacilli in the urine as they appear under the microscope after being stained.

trary to general opinion, is also one of the simplest and easiest. It provides the urologist or general practitioner with all the information essential to the intelligent treatment of infections of the urinary tract. To stress its simplicity, I shall

outline the technic as it is now carried out in our laboratory. The dried and fixed slide is immersed in Weigert's gentian violet solution for two minutes. This dye is then washed off with water and the slide immersed in Gram's iodine solution for one minute and a half. It is then washed in acetone until decolorized. It is immersed in one per cent aqueous safranin for one minute, after which it is washed with water, dried, and examined under the oil immersion lens of the microscope.

The common infecting organisms in the urinary tract fall into two groups, being either gram-negative bacilli or gram-positive cocci. Of the infections caused by gram-negative bacilli, well over half are due to the colon bacillus, but further subdivision is not essential for treatment.

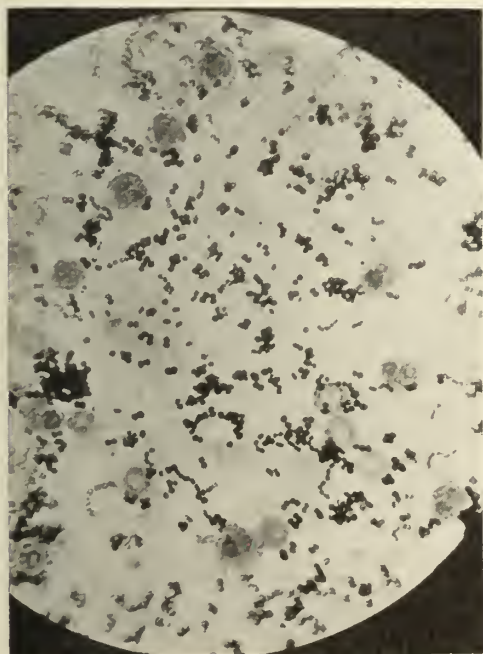


Fig. 2. Staphylococci in the urine as they appear under the microscope after being stained.

Figure 1 shows the typical appearance of gram-negative bacilli under the microscope. The second group consists of gram-positive cocci. Further subdivision is not essential, but is readily made from the microscopic study of the stained urine. Figure 2 shows a staphylococcus, and Figure 3 a Streptococcus.

The treatment of urinary tract infections has in recent years run the gamut from alkalinization to acidification, to methenamine, to the ketogenic diet, to neoarsphenamine, to mandelic acid, to sulfanilamide. Let us first consider the treatment of patients whose infecting organism is a gram-negative bacillus. The predominant organism in

this group is the colon bacillus, and we shall discuss its treatment since other bacillary infections are treated in the same manner. Two drugs are efficacious in eradicating the bacillus: mandelic acid and sulfanilamide. The two drugs are about equally effective; neither is effective in all cases. Fortunately in the cases in which one drug fails the other often succeeds. Both drugs at times

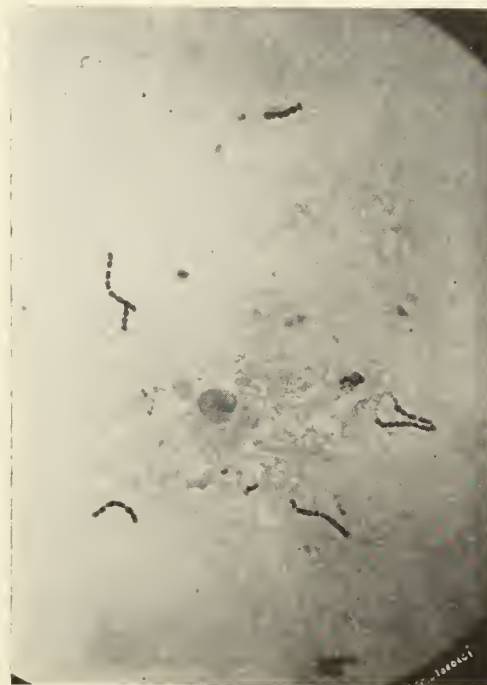


Fig. 3. Streptococci in the urine as they appear under the microscope after being stained.

give unpleasant side effects, but patients who do not tolerate the one are often able to take the other without discomfort.

Mandelic acid is best given as the elixir of mandelic acid, because it is more palatable in this form. Mandelic acid has been put out recently in the form of pills, which most patients can take without discomfort. The dosage of the elixir for an adult is three teaspoonsful four times a day, taken in about a quarter of a glass of water. The drug should be taken after meals since it sometimes causes anorexia if taken on an empty stomach. During the time mandelic acid is being taken the fluid intake should be reduced, because it is effective in proportion to its concentration in the urine. Mandelic acid is only effective in an acid urine and its effectiveness increases in proportion to the acidity of the urine. The mandelic acid is itself an acidifier of the urine, but experience has demonstrated that better results are obtained if it is combined with ammonium chloride at the outset. It has been my custom to

prescribe twenty-four ammonium chloride tablets of seven and one-half grains each to be taken at the rate of two tablets four times a day for the first three days of the treatment. The acidity of the urine can be easily measured by immersing a piece of nitrazine paper in the urine and comparing it with the color chart which is provided for that purpose. Eight ounces of the elixir of mandelic acid are prescribed, which will suffice for between five and six days. At the end of that time the patient often experiences a very gratifying relief from the dysuria, urgency and frequency of urination which are the symptomatic manifestations of the cystitis. At the end of this time the urine is reexamined for pus cells and for bacteria, and the acidity of the urine is again determined. If pus cells and organisms are present, the treatment is continued for another five or six days. If the acidity of the urine is less than 6.0, it is not essential to repeat the ammonium chloride. If, however, the urine has a pH of 7.0 or above, it is necessary to increase the ammonium chloride sufficiently to acidify the urine. As many as twelve tablets of seven and one-half grains each may be given in a day. At the end of the six day period the treatment may have had a bacteriostatic effect on the infecting organisms; that is, it may have rendered them innocuous without having exterminated them. Bacteriostasis may give complete relief from symptoms and the patient may see no reason for continuing the treatment after the desired effect has been obtained. To prevent a recurrence of the virulence of the organisms, accompanied by a recurrence of the symptoms, it is advisable to continue the treatment until the organisms have been exterminated. To accomplish this another eight ounces of the elixir of mandelic acid are given over another period of from five to six days. At the end of the ten or twelve day period, during which sixteen ounces of the elixir of mandelic acid have been taken, the treatment is discontinued and the urine reexamined. Experience has shown that the effectiveness of mandelic acid diminishes after it has been taken for ten days or two weeks. At the end of this period of time, the desired bactericidal effect will have been obtained in most cases. The further treatment of the occasional resistant case will be described later.

The alternate method of treating cases of cystitis due to a bacillus is with sulfanilamide. With this drug it is not necessary to acidify the urine nor is it necessary to concentrate the urine by reducing the fluid intake. The patient is given a prescription for sixty tablets of sulfanilamide of

five grains each with instructions to take three tablets four times a day, that is, twelve tablets a day for five days. In some people sulfanilamide gives strange side reactions. Patients are warned that they may expect some loss of appetite and a little headache. They are, however, instructed to discontinue the drug immediately if the side reactions exceed the above. Some patients experience vertigo or nausea or the general feeling of ill being and occasionally a localized edema or an erythema. Fortunately these symptoms will disappear in from twenty-four to forty-eight hours after the drug is discontinued. At the end of the five day period of treatment, the urine is reexamined for pus cells and for organisms. If the effect has been bactericidal, the treatment is complete. If, however, only a bacteriostatic effect has been obtained, the treatment is continued for another five days, at the end of which time the urine is again examined. At the end of the ten days this treatment is discontinued because sulfanilamide, like mandelic acid, diminishes in effectiveness if taken continuously for more than ten or twelve consecutive days. At the end of this period of time, the desired effect will have been achieved in all but the resistant cases.

Mandelic acid and sulfanilamide are about equally effective. Mandelic acid gives fewer side reactions but the taste is unpleasant. It is essential to have both drugs in one's armamentarium, because some people cannot tolerate mandelic acid and some cannot tolerate sulfanilamide. Fortunately the people who cannot take the one drug can usually do well on the other. Mandelic acid is dependent for its effectiveness on good renal elimination and will not have a bactericidal action in the presence of reduced kidney function. If one kidney has a decreased function, the mandelic acid will be excreted largely through the good kidney and have little effect on an infection in the poorly functioning kidney. It is, therefore, of little advantage in an infected hydronephrosis. Sulfanilamide is less dependent on renal function and relatively more effective in cases of infection of the urinary tract associated with reduced function of one or both kidneys.

In the cases of urinary infections in which the urine remains persistently alkaline in spite of attempts to acidify it, the mandelic acid is of no avail, since it functions only in an acid urine. In most bacillary urinary tract infections in which the urine is persistently alkaline, the infecting organism is the *Proteus ammoniae*. This bacillus breaks down the urea secreted by the kidneys into its component parts, one of which is ammonia. The ammonia keeps the urine alkaline in spite of

all efforts to bring the pH to the acid side. The alkaline urine favors the precipitation of phosphate crystals and leads to the formation of calcium phosphate stones. Many patients suffering from a *Proteus ammoniae* infection are persistent stone formers. Sulfanilamide is the one drug that is an effective bactericide in the presence of an alkaline urine and is the one drug that will cope with a *Proteus ammoniae* infection. The greatest value of sulfanilamide may prove to be in the treatment of patients who are persistent stone formers due to an infection with the *Proteus ammoniae* bacillus.

There are two conditions requisite to the effective treatment of urinary infections; one is the absence of foreign bodies, and the other is the absence of obstruction. In the presence of calculi the treatment is not effective, and it is only after the calculi have been removed that attempts to cure the infection can be successful. It is, incidentally, very important for infecting organisms to be eradicated as soon as possible after the stone has been removed in order to prevent the formation of another stone. This is particularly true when the infecting organism is the *Proteus ammoniae*, and it is to be hoped that sulfanilamide, used in this way, will prove to be the solution to the baffling problem of repeated stone formations. The other requisite to the successful treatment of urinary tract infections is that of adequate drainage in the urinary tract. When there is obstruction to the outlet of the bladder and residual urine remains after each voiding, it will usually be impossible to rid the bladder of infection, although much relief from the dysuria can be obtained. After the obstruction has been removed and the complete emptying of the bladder accomplished, the infection of the urine will respond well to treatment. Similarly an infected hydronephrosis will not respond to treatment until adequate drainage of the kidney is achieved.

In the choice between mandelic acid and sulfanilamide in the treatment of urinary infections due to bacillus, it is well to be prepared to use both. Mandelic acid has more predictable and less severe side reactions, and for this reason I prefer to start with it in cases which are not under observation. If the mandelic acid is not well tolerated, I change the treatment after five days. If it is well tolerated, I continue it for ten days. If, after ten days, the mandelic acid has not proved wholly effective, I change to sulfanilamide for a five day period and continue it for ten days if needed. If the patient is under daily observation, I often start with sulfanilamide for five or ten days and then change to mandelic acid

if the sulfanilamide is poorly tolerated or ineffective. It is seldom necessary to change back to the first drug; it is remarkable how often the one drug is effective and well tolerated in precisely those cases where the other drug has failed.

Urinary infections caused by gram-positive cocci are treated in an entirely different way. Coccal infections are often associated with alkaline urine and incrustrated cystitis. Cystitis caused by a coccus is often symptomatically more severe than one caused by a bacillus. If the urine can be sufficiently acidified, some benefit can be obtained from the use of mandelic acid, especially in the staphylococci, but the organism can seldom be eradicated by this means alone. Sulfanilamide has some bacteriostatic effect on both the staphylococcus and the streptococcus, but when medication is discontinued, the organism often regains its virulence. The effective treatment of coccal infections is by the use of intravenous neoarsphenamine. Three injections are made at four or five day intervals. At the first injection 0.3 of a gram of neoarsphenamine is used, and at the subsequent two injections, 0.45 of a gram each should be given. Great care is, of course, essential in the administration of this drug, because an extravascular injection will cause the patient more distress than did the cystitis for which it was given.

The relief afforded the patient as the result of this form of therapy is frequently most gratifying. A single but striking example will be presented. Recently a woman was referred for the treatment of a severe cystitis. She voided several times an hour during the daytime and was up four to seven times at night. She complained of severe dysuria with stranguria and also of some hematuria. The urine contained one hundred and fifty pus cells to the high powered microscopic field and the gram stain showed both staphylococci and gram-negative bacilli. An intravenous injection of 0.45 of a gram of neoarsphenamine was given. The urine was acid, having a pH of 5.7, and she was given a prescription for eight ounces of elixir of mandelic acid with instructions to take three drams four times a day. She returned to her home, which was out of the city. One week later, on returning to the office, she stated that she had improved rapidly and was entirely free from her symptoms. The urine at this time contained only occasional pus cell and no organisms. She was extremely grateful for the prompt and complete relief from a most distressing affliction.

The case cited is atypical to the extent that the symptoms were more severe and the relief more dramatic than in the average case. It serves,

however, to illustrate what may be accomplished by the use of modern methods in the control of urinary tract infections.

CONCLUSIONS

1. This presentation deals with the treatment of urinary tract infections by modern methods.

2. Preliminary to the treatment, two determinations must be made on the urine: first, a pus cell count on the sediment; and second, a gram stain of the sediment to identify the infecting organism.

3. The technic of therapy is outlined, involving the use of mandelic acid, sulfanilamide, and neoarsphenamine.

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EXTREME AZOTEMIA OF UNKNOWN ORIGIN AND WITHOUT UREMIA*

Case Report

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The retention of nonprotein nitrogen in the blood is called azotemia. Uremia is the clinical syndrome which frequently, but not invariably, follows nitrogen retention. It is obvious that the two terms are not synonymous and there is no adequate explanation of the fact that one patient with an increase of nitrogen waste products in the blood has the combination of signs and symptoms which we call uremia, whereas another with an equal nitrogen retention does not. Azotemia is nearly always a result of renal insufficiency, but occasionally it occurs when the kidneys are functionally intact (so-called extrarenal or prerenal azotemia) as in dehydration, alkalosis, or loss of chlorides.¹ As a rule, it is easy to ascertain whether or not there is impairment of renal function, but in certain instances this may be difficult or impossible. Our patient is one in whom this differentiation was impossible. Furthermore, there was extreme azotemia without uremia.

In the literature, there are very few nonfatal instances of extreme azotemia. However, a recent report by Bowman and Wolpaw² describes a patient who, in order to induce abortion, took "savatan"[†] capsules by mouth and placed two bichloride of mercury tablets against the cervix. She became icteric, and developed acidosis (the CO₂ was 13.6 volumes per cent), definite hematuria, and severe albuminuria. The blood creati-

nine rose to 24.3 milligrams per cent. In spite of this, she recovered and two and one-half years later went through an uneventful pregnancy. The authors believed that her renal insufficiency was probably produced by mercury poisoning. Our patient had a blood creatinine of 20 milligrams per cent, was never acutely ill, and also recovered.

CASE REPORT

A married white woman, thirty-six years of age, was admitted to the University Hospitals June 24, 1933, complaining of vomiting and a bloody vaginal discharge, both of eight days' duration.

The patient's general health had always been good. She had scarlet fever, complicated by acute mastoiditis, at the age of nine years, and mastoidectomy was performed successfully at that time. There was no evidence of renal damage. She had not had frequent sore throats or tonsillitis.

Two months before admission to the hospital, vaginal bleeding began spontaneously and continued intermittently. However, the patient felt well until eight days before admission, when she began to vomit. Within a few hours, cramping pains occurred in the lower abdomen, the vaginal bleeding became more profuse, and a four months' fetus was passed. The vomiting and vaginal bleeding continued for the eight day period. She had been unable to retain anything by mouth and fluids were not given by any other route. The daily excretion of urine was reduced to only a few drops. However, there was no edema of the face or extremities, and dysuria, urgency, or frequency of urination were not noted. Gross hematuria did not occur and there had been no fever, chills, sweats, headache, or blurring of vision.

The patient was well developed and moderately obese. She appeared quite ill but was conscious and cooperative. The skin was pale but not icteric. In spite of the history of vomiting and complete inability to retain fluids for eight days, the skin and mucous membranes were not unduly dry. Examination of the ocular fundi revealed no abnormalities. The heart was of normal size; a faint systolic murmur was heard at the apex. The arterial blood pressure was 130/68. The peripheral blood vessels were not thickened or tortuous. No abdominal masses or organs were palpable. A foul, bloody vaginal discharge was present, but pelvic examination revealed only a lacerated cervix. There was no edema of the extremities.

A voided specimen of urine was alkaline in reaction and showed a moderate amount of albumin and a trace of sugar. Microscopically, many red and white blood cells were seen. An insufficient

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[†]Savatan contains the ecboic oils of tansy, mint, and apiol.

amount of urine was available to measure the specific gravity. Examination of the blood gave the following result: hemoglobin, 40 per cent (Sahli); erythrocytes, 2,260,000; and leukocytes, 13,200. The differential leukocyte count was normal and a stained smear showed nothing but achromia of the red blood cells.

The temperature was 101 degrees by rectum on admission, but promptly returned to normal. The vaginal bleeding immediately ceased. She was not permitted to take anything by mouth, and saline and glucose solutions were administered parenterally. A transfusion of 700 cubic centimeters of whole blood was given on the third hospital day. Two days later (the fifth hospital day) the vomiting ceased and the patient did not suffer again from nausea and vomiting while she was in the hospital. Chart 1 is a record of her daily fluid intake and urine output and shows the extreme oliguria which was present during the first week. With the cessation of vomiting there was a grad-

CHART I
DAILY FLUID INTAKE AND OUTPUT

Date	Fluid Intake Cubic Centimeters	Urine Output Cubic Centimeters
6-24	1500	100
25	1000	240
26	4100	75
27	4050	150
28	3200	200
29	2000	500
30	3900	825
7- 1	3800	1200
2	4600	1300
3	4045	1600
4	4530	1700
5	4120	2550
6	4100	4050
7	4755	3900
8	4480	3950
9	4260	3550
10	4640	1700
11	4230	2350
12	4505	2900
13	4300	3250
14	4095	3150
15	4630	2900
16	4260	3750
17	4600	3400
18	4510	3200
19	4760	3300
20	4400	3100
21	4400	3000
22	4485	2950
23	4885	3750
24	4785	3300

ual increase in the amount of urine secreted. Extraordinary nitrogen retention in the blood was discovered on the third hospital day. (Chart 2 shows the blood chemical studies in detail). In spite of the extreme azotemia, the patient felt well, had a normal appetite, and maintained a large

fluid intake. In brief, none of the symptoms of uremia was present. Furthermore, the arterial blood pressure was consistently normal and the ocular fundi showed no exudate, hemorrhages, edema or vascular changes. Albumin in the urine varied from none to one plus at the most; it was unusual to find a cast even in a centrifuged specimen, and at no time was blood detected by chemical tests or with the microscope. The specific gravity of the urine was consistently low, even during the first week when extreme oliguria was present. The blood nonprotein nitrogen values slowly decreased and eventually reached approximately normal limits. The anemia responded very slowly in spite of the transfusion and the administration of liver extract, extralin, and iron. The patient was permitted to go home August 15, 1933, (the fifty-second hospital day). She felt well at that time, but was very weak. She was instructed to keep her fluid intake high and to follow a diet in which the amount of protein was limited to 25 grams a day.

The patient has been observed over a period of four years and four months (See Chart 2). She has remained well and has been able to work all of the time. In September, 1934, one year and three months after the original illness, she had a series of sore throats and at that time a few red blood cells appeared in the urine. A tonsillectomy was carried out. Since then she has had no further hematuria or sore throats. At the present time the patient is doing all of her own housework and also working six to eight hours daily in a cafe. She followed a low protein diet for one year but has had no dietary restrictions for the last three and one-third years. Salt has never been restricted. The anemia has disappeared slowly and the blood proteins are normal.

Definite evidence of renal impairment has persisted. As a rule the specific gravity of the urine has been less than 1.010. The urea clearance has not been over 41 per cent of normal and the blood nonprotein nitrogen has not returned entirely to normal. At the last examination the creatinine was two milligrams per cent and the urea nitrogen 22.4 milligrams per cent. The low specific gravity of the urine and the persistent nocturnal diuresis may be due in part to her rather large fluid intake, but this is not necessarily true, because two years ago the urine could be concentrated to a specific gravity of only 1.017.

COMMENT

We have been unable to discover the cause of the pronounced azotemia. The presence of chronic nephritis is suggested by the persistent impairment of renal function. It appears unlikely, how-

CHART II

Date	Blood Urea Mgm %	Blood Creat. Mgm. %	Blood CO ₂ Comb. Power	Blood Cl.	B. P.	Urine		Blood			Miscellaneous
						Sp. Gr.	Alb.	Hgb.	RBC (Millions)	WBC	
6-26-33	151.2	14.7	139/68	40	2.26	13,200	Normal fundi
6-27-33	140.7	20.0	46.7	457	110/52	.....	.....	.....	2.35	14,350
6-29-33	142.8	18.8	49.5	507	128/65	.....	.....	.....	.....	.....
7- 3-33	129.5	18.9	38.4	600	145/90	1.005	.....	50	2.19	10,850
7- 6-33	98.0	15.9	40.3	595	.....	1.005	tr	50	2.29	8,350
7- 8-33	72.1	11.2	39.3	625	.....	1.005	tr	.....	.....	.....
7-10-33	27.3	8.0	43.9	625	.....	1.003	tr	.....	.....	.....
7-15-33	42.7	5.8	40.3	625	1.007	tr	58	2.34	6,400	Urea Clearance 19.3% Serum Protein 7.43 gm.
7-19-33	38.5	4.6	42.1	625	.....	.....	.....	54	2.35	.....
7-22-33	30.8	4.5	53.3	622	Urea Clearance 9.1%
8-12-33	16.1	2.5	.....	.....	.....	.....	0	.....	.....	.....
9-21-33	19.6	1.3	120/80	1.010	tr	72	3.78	10,100	Urea Clearance 24% Serum Protein 5.84 gm. Urea Clearance 39.4% Serum Protein 5.47 gm. Urea Clearance 40.6% Serum Protein 6.42 gm.
11-13-33	29.4	2.1	.....	.....	120/70	1.016	tr	76	4.4	7,850
12-12-33	25.2	2.0	.....	.....	118/76	1.017	?	.....	.....	.....
2-13-34	20.3	2.0	.....	.....	110/74	.....	.....	70	3.97	11,800
4-17-34	24.5	2.2	1.017	?	74	3.65	7,500	Normal fundi Urea Clearance 37% Serum Protein 6.58 gm. Urea Clearance 41% Serum Protein 6.58 gm.
6-12-34	25.9	2.5	.....	.....	110/80	1.002	tr	.....	.....	.....
6-30-34	23.8	2.0	.....	.....	.....	1.008	0	75	3.34	12,400
9-27-34	22.4	2.0	.....	.....	118/70	1.007	tr	92	4.10	8,200
11-15-34	21.7	2.0	124/80	1.010	0	69	4.73	11,200	Urine Concentration test Sp. Gr. 1.020 Urea Clearance 49.6% Urine Concentration test Sp. Gr. 1.017 Serum Protein 6.20 gm. Urea Clearance 47% Urea Clearance 38.2% Serum Protein 5.12 gm.
12- 2-35	17.5	1.4	.....	.....	122/76	1.010	tr	90	4.20	9,200
10-20-37	22.4	2.0	.....	.....	110/80	1.004	tr	90	4.35	7,000

ever, that this is one of the rare instances of nephritis with a normal arterial blood pressure, normal ocular fundi, relatively slight albuminuria and cylindruria, and without hematuria.

The combination of loss of chlorides from vomiting, dehydration, and loss of blood might seem to be adequate for a diagnosis of extrarenal azotemia. However, the low specific gravity of the urine in the presence of marked oliguria is not usual and, according to Fishberg,¹ is impossible with functionally intact kidneys. Furthermore, there was no definite evidence of alkalosis, or acidosis, and the blood chlorides were normal. The blood was not examined chemically, however, until the third hospital day, after fluids and chlorides had been given parenterally, so it is possible that one or more of the above features might have escaped detection. The absence of edema or hypertension and the relatively slight albuminuria exclude toxemia of pregnancy.

Although the patient firmly denied having taken any unusual medication, the possibility of renal damage from the use of an abortifacient cannot

be excluded satisfactorily. Turpentine, a popular but dangerous abortifacient, usually produces strangury, hematuria, and albuminuria, but occasionally it causes complete suppression of urine and skin eruptions of various kinds.³ Our patient had a skin eruption, somewhat resembling measles, on the third hospital day. Although it is unlikely, turpentine poisoning could have been responsible for the manifestations which our patient presented. The absence of hematuria is definite negative evidence.

SUMMARY

This is a report of a case of extreme azotemia of unknown etiology, unattended with uremia; the patient made a good subjective recovery, but after four and one-third years continues to show objective evidence of kidney damage.

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PRACTICAL ASPECTS OF DIABETES MELLITUS WITH AN EVALUATION OF PROTAMINE ZINC INSULIN*

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The object of this paper is to emphasize a few practical working points in the handling of the patient with sugar in the urine. Primarily, is he a diabetic patient? How can we make certain that he is? If so, how will we manage him? A few moments in the consideration of the diagnosis of diabetes will be well spent for upon this rests all future treatment throughout the life of the patient. An early diagnosis means early treatment with a better prognosis.

In the majority of cases the first lead to a diagnosis is the finding of glycosuria, usually in a random specimen of urine. Comparatively few diabetic individuals present themselves for the first time with all the cardinal symptoms and signs. Only a minority are first seen in coma. Therefore, the importance of obtaining a specimen of urine in every patient examined cannot be overemphasized. Although the chances are preponderant that the patient with glycosuria has diabetes, the final diagnosis does not rest on this finding alone, even if there is sugar present on repeated urine examination. That this is one of the most frequent errors is attested by the fact that one in every six or seven patients who enter the Joslin Clinic for diagnosis or treatment of diabetes are found to be nondiabetic.¹

The finding of glycosuria prompts further investigation, or else we would fail by making a false diagnosis of diabetes, or not making a diagnosis when diabetes mellitus is present. A blood sugar test is next in order. With the well equipped laboratories all over the state there is no excuse for a doctor skimping on this diagnostic procedure if his patient has sugar in the urine. The seriousness of the diabetic person's plight certainly warrants every diagnostic aid we have at our command. The blood sugar test is relatively simple and the one that gives the most information is taken one hour after a meal of good carbohydrate content. Usually this single blood sugar determination establishes the diagnosis. The fasting blood-sugar content is not a good criterion, because a great many diabetic children and many diabetic adults have normal fasting blood-sugar contents. If the postprandial blood-sugar value is within normal limits, then a glucose tolerance test should be made in order to establish a definite

diagnosis. If the fasting blood-sugar content is 140 milligrams per 100 cubic centimeters or over, or if at any time of the day it is 170 milligrams or over, (venous) or 200 milligrams or over (capillary), the diagnosis of diabetes mellitus is made, if sugar is present in the urine.²

If the diagnosis of diabetes mellitus is made, the next point for consideration is the treatment. Unless the patient is in coma, we can proceed leisurely. We must decide whether the diabetes can be controlled by a readjustment of the diet alone or whether insulin is needed to supplement that produced by the pancreas. Just as for any normal individual, the diabetic patient's diet must furnish sufficient calories for the metabolic needs and the daily activities of the patient. It should be well-rounded and contain the essential vitamins, minerals and fluids. The average requirement of a normal individual varies from 25 to 40 calories per kilogram in twenty-four hours. The needs vary with the type of work in which the individual is engaged. An adult with diabetes should not require more than 30 calories per kilogram daily.

The proportions of a person's diet are not of utmost importance. Man seems to get along from every viewpoint physiologically on diets of wide variation, from the Chinese who eat principally carbohydrates to the Eskimos whose diet consists largely of fat. In treating diabetes some physicians have used high carbohydrate—low fat diets, and others the high fat—low carbohydrate diets. All claim good results. We have attempted to follow Joslin's teachings and to adhere to a course between the extremes of diet high in carbohydrate and high in fat, aiming to keep the patient somewhat underweight. If the fundamentals of total calories and body weight are observed, it is undoubtedly possible to treat diabetes successfully with either a high fat, high carbohydrate, or intermediate diets. One must be certain, however, that a diet is prescribed which the patient will measure or weigh and will follow without any burden or unnecessary arithmetic. The patient should be told what he can eat, rather than what he must avoid.

The following table shows the proportions of diet which we use. They average about $2\frac{1}{2}$ grams of carbohydrate, $1\frac{1}{4}$ grams of protein, and $1\frac{1}{2}$ grams of fat, per kilogram each day. The carbohydrate is distributed so that one-fifth is given for breakfast and two-fifths for each of the other two meals. The diet gets its number from the ideal weight of the patient in kilograms. If the patient's ideal weight is fifty kilograms or about 110 pounds, we judge he requires diet No. 50.

*Presented before the Des Moines Academy of Medicine and the Polk County Medical Society, March 29, 1938.

DIABETIC DIETS

Diet Number	Carbo-hydrate	Protein	Fat	Calories
40	110	50	60	1180
45	122	55	72	1356
50	130	60	80	1480
55	140	73	92	1680
60	150	75	90	1710
65	160	84	105	1921
70	172	95	121	2157
75	187	94	125	2250
Liquid	120	30	50	1050

With the eventual diet having been forecast it is probably best to begin the patient on a diet below the basic caloric requirement and to increase it gradually to a maintenance level. If the urine is kept sugar-free, more strength and energy are present, resistance to infection is greatest and complications are avoided. The patient who continues to have sugar in the urine loses his ability to burn carbohydrates because a high blood sugar content is the strongest stimulation to the secretion of insulin. If this is continued the islet cells of the pancreas become exhausted. Certainly it is wiser and more conservative to have a normal body chemistry until someone proves conclusively that abnormal conditions are safe.

If glycosuria persists in spite of diet, the next procedure is to render the urine free of sugar. This is best attained by dividing the twenty-four hour urine output into four specimens so that we might know at what time of the day glycosuria, if any, takes place. The first specimen is the entire amount voided from breakfast to lunch. The second specimen is the output from lunch to dinner. The third specimen from dinner to 10:00 p. m. and the fourth specimen from 10:00 p. m. to 7:00 a. m. A knowledge of the volume voided and the total gram output of sugar in a given period is a much better indication of tissue changes than is a single two hour after food specimen, as is the routine of many. In the majority of patients, when all four urine specimens are sugar-free, the blood-sugar values are within normal limits. However, three or four blood-sugar determinations should be made during the day. The acceptance of one blood sugar reading as an estimation of the degree of control is no better an index than one single urine specimen. Our routine is to have these specimens taken at 7:00 a. m. (in the fasting state), at 11:00 a. m. (two and one-half hours after breakfast), and at 4:00 p. m. (three hours after lunch). When the urine specimens are sugar-free and the blood-sugar contents are below 160 milligrams, or as nearly so as possible, we consider the diabetes controlled. In the older group it is not advisable to be too energetic about decreasing the blood-sugar value, because it

is dangerous to expect them to be sugar-free over the twenty-four hour period.

The majority of diabetic patients will need insulin to supplement that supplied by their own pancreas. Insulin accelerates the utilization of glucose and abolishes acidosis by restoring the carbohydrate combustion and glycogenesis. The determination of the dose of insulin is based on trial with a consideration of such criteria as the amount of glucose in the urine, the presence of ketone bodies, the height of the blood-sugar determination and such clinical symptoms as the degree of dehydration, and the presence of such complications as infection, arteriosclerosis, etc.

PROTAMINE ZINC INSULIN

This new type of insulin has received much discussion in the literature during the past year. Its action as compared to regular insulin is generally known. It begins to be absorbed in two to four hours and has a continued insulin action for eighteen to seventy-two hours. When we began using this new drug in May, 1936,* at the Broadlawns General Hospital, we had hoped that it would be a panacea for all types of diabetes and would make up for all the deficiencies of unmodified insulin. At the start we thought our problem would be merely a matter of changing over our patients so that ultimately all those needing insulin would be controlled by one dose of protamine zinc insulin a day. At first we chose only those patients with diabetes of recent duration, and especially those getting two or three injections of insulin a day, but as we learned more about the new product we extended its use.

Routinely we hospitalize the patients in order to learn how well they are controlled on their diet and the insulin they are taking. In this way we have a means of comparing their status on regular insulin and on the new insulin. The diet is not changed from what the patient was originally taking. If the blood-sugar values are not within normal limits, the dose of regular insulin is increased according to the time of day it seems necessary. When the blood-sugar content comes within normal limits, the simplest method in which to change over is to substitute with one dose of protamine zinc insulin one hour before breakfast the following morning, which is equal to the combined number of units of regular insulin previously required over a twenty-four hour period. Usually with this procedure the blood-sugar readings for the first two or three days are elevated because protamine zinc insulin has a cumulative

*These products were at first generously supplied by Eli Lilly and Company, Indianapolis, Indiana, and by E. R. Squibb and Sons, New York, New York.

action and the initial dose seems to have little effect on the first day's breakfast and lunch. The lack of control for these few days probably does no harm, but in those taking very large doses of insulin it might be safer to supplement regular insulin for the first few days. Because of the cumulative action it is best not to vary the dose of protamine zinc insulin during the first three days at least, nor to increase the dose more often than every two or three days unless the blood-sugar value drops to low limits. If after this time the fasting blood-sugar content is excessive, the dose is increased usually by five units at a time. Subsequently if the morning fasting levels are low or hypoglycemic reactions occur, then the dosage is reduced. The experience with one of our patients serves as an example.

Case 1. The patient, a married woman with diabetes of five years' duration, had been on a diet of her own composition, and had lost a great deal of weight. She was admitted to the hospital July 20, 1937. She was sugar-free on July 27, 1937, on unmodified insulin, 25/10/15/10. The following morning she was given only protamine zinc insulin, 60 units before breakfast, and discharged four days later on 50 units of protamine zinc insulin. The urine was sugar-free during the interval, and the patient had had no reactions. She was readmitted December 10, 1937, for blood-sugar determinations, which were found to be within normal limits. Twenty-four hour specimens of urine have been sugar-free ever since. (See Fig. 1.)

We learned it was a relatively simple matter to obtain a normal fasting blood-sugar value with protamine zinc insulin, but it was occasionally difficult to prevent reactions during the night and glycosuria during the day. Very frequently changing the dose of insulin did not correct this, but

spreading the diet solved the problem. A portion of the carbohydrate saved from breakfast is given in the mid-forenoon, and likewise small feedings are given in the mid-afternoon and at bedtime in order to eliminate the marked fluctuations in the blood-sugar content. Particularly in private practice where the patient can have his evening meal at any time he desires, a late evening meal gives a smoother control because it tends to counteract the low blood-sugar value of the night.

Occasionally it is necessary to vary the amount of carbohydrate in each meal in order to strike a balance between glycosuria and hypoglycemia. While regular insulin, because of its short period of activity, is adjusted to the meals, protamine zinc insulin may be given once a day and the food adjusted to it. Figure 2 is an example of the

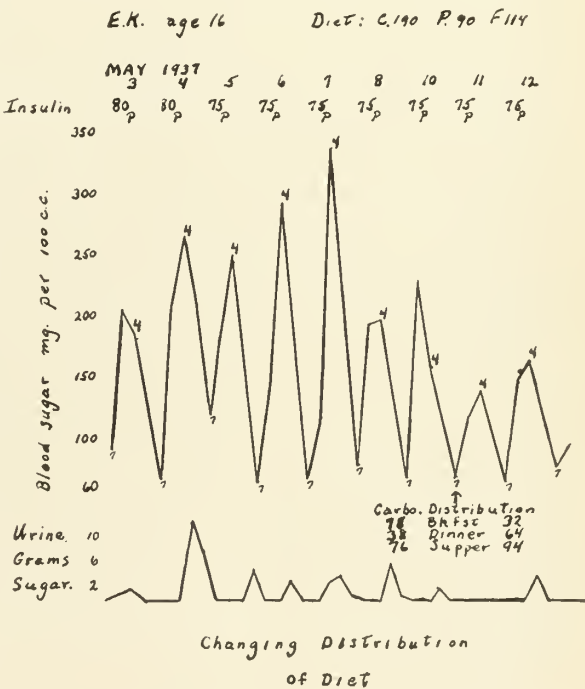


Fig. 2. The "P" following the number represents protamine zinc insulin in units. The "T" indicates the 7:00 A. M. fasting blood-sugar values, and the "4" indicates the 4:00 P. M. blood-sugar values.

effect of changing the distribution of the diet, leaving the proportions of the diet the same, so that the patient receives the bulk of his food at the time of the day he is best able to handle it, thus eliminating peaks in the blood-sugar values.

Case 2. The patient, a male sixteen years of age, had diabetes of four years' duration. There was fair control on four doses of unmodified insulin daily until April, 1937, when he was changed to protamine zinc insulin, 75 units once daily. He was readmitted on May 2, 1937, because of reactions in the mornings. The carbohydrate dis-

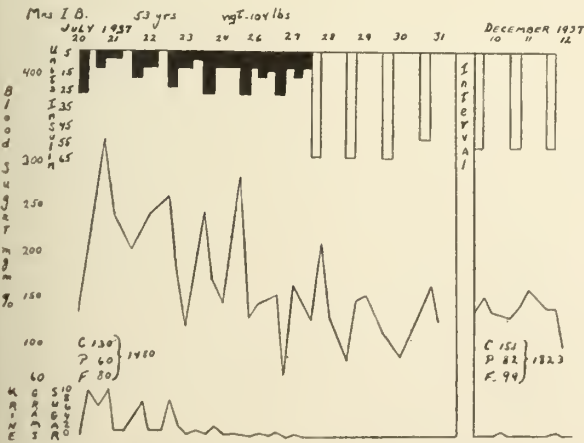


Fig. 1. Regular insulin is indicated by the black columns; protamine zinc insulin by the clear columns.

tribution was changed to two-fifths for breakfast, one-fifth for dinner, and two-fifths for supper. Marked fluctuations in the blood-sugar content were still present, and the carbohydrate distribution was again changed to one-sixth, two-sixths and three-sixths. Thus the peaks in the blood-sugar curve were eliminated. He is now on 75 units of protamine zinc insulin once daily, and the diabetes is well controlled.

Even with the readjustment in diet and closest observation, some patients cannot be controlled on one dose of protamine zinc insulin alone, but tend to pass large amounts of sugar after meals. If the dose is increased, hypoglycemic reactions appear in the fasting state. The obvious treatment in these instances is to give regular insulin along with the basal dose of protamine zinc insulin, the regular insulin being supplemented at the meals following which glycosuria is likely to occur. Both types of insulin should not be taken in the same syringe at the same time. Protamine zinc insulin is best injected one hour before breakfast and the regular insulin about fifteen or twenty minutes before the meal. It is well not to inject the two types of insulin at the same site, since there may be an admixture of the two forms in the tissues so that regular insulin is changed to the slower acting insulin. Some patients with mild diabetes who were not using over 15 or 20 units of insulin a day were changed to protamine zinc insulin without hospitalization and they responded as well as those who were in the hospital for the change. The patient is seen every one to six weeks, depending upon the degree of control and the severity of the diabetes. He brings a report of the tests made between visits and a sample of the twenty-four hour urine specimen, having measured the total volume collected at home. This serves to estimate the amount of sugar excreted in twenty-four hours. The insulin dosage may need to be adjusted periodically.

Exercise is just as important for the patient on protamine zinc insulin as it ever was. Exercise favors the combustion of carbohydrates with available insulin whether endogenous or exogenous. The life of the patient outside the hospital is more strenuous than in the hospital and, therefore, on discharge the insulin dosage should be decreased by five or ten units, depending upon the severity of the disease, and the patient should be cautioned to increase the exercise gradually. If the patient is well controlled, as he frequently is on protamine zinc insulin, his metabolism is like a normal person's and on exercise he must have available carbohydrate to burn. If the carbohydrate is burned up completely and more is not

available the patient has a reaction. On contemplated exercise extra carbohydrate should be taken instead of decreasing the dosage of protamine zinc insulin because of the slow reaction of this new type of insulin. Those who are irregular in exercise or in occupation do much better on regular insulin, and if they are well controlled we do not urge them to change to protamine zinc insulin.

It is a well known fact that infections produce rapid fluctuations in the carbohydrate tolerance and counteract the efficiency of insulin. A patient with the severe type of diabetes who develops an infection may need a great increase in insulin. Since protamine zinc insulin is slow in its action, we feel that its dose should remain unchanged in those needing more insulin, but that additional unmodified insulin should be given in divided doses. As soon as the infection subsides and the carbohydrate tolerance increases, regular insulin is omitted and the patient will usually then remain on the same dose of protamine zinc insulin he used before developing the infection.

Preoperative and postoperative care of diabetic patients presents a similar complex situation. We feel it is best to use the regular quick acting insulin to handle the sudden increases in glucose intake as given intravenously either preoperatively or postoperatively. The dose of the supplemented regular insulin is determined by the degree of glycosuria every three or four hours. The regular insulin is omitted as soon as the patient can be controlled by protamine zinc insulin alone.

Hypoglycemic reactions were probably seen more frequently at first than before the patients were changed, but they decreased in number as our experience with protamine zinc insulin grew. Occasionally they were due to a cumulative effect when too rapid increases in dosage were made before the delayed effect was obtained. The symptoms of reaction are more severe and more prolonged than those due to regular insulin. Symptoms of cerebral origin as headaches, drowsiness, mental dulness, and fatigue are early signs of a reaction. When headache is complained of on arising in the morning, one should look for an abnormally low blood-sugar content during the night. It is generally known that slowly absorbed carbohydrates, such as milk and crackers, are required along with readily available carbohydrates such as orange juice, to overcome the prolonged hypoglycemia.

Now that the new insulin has been in general use for over a year, an appraisal of its clinical usefulness is due. Protamine zinc insulin is a great therapeutic advance if one has a definite knowledge of its action and pays close attention

to his patients, but it has not lived up to the expectations which many first held. Since its introduction, more time and study of diabetic management has been required because of individualization in treatment. At present we can only indicate how we use protamine zinc insulin and the results we obtain in suitable cases under close observation. The original hope that it would control all types of diabetes, both severe and labile, has not been fulfilled. No hard and fast rules can be set down regarding its use. Without a clinical trial in individual cases one cannot predict with certainty in which cases he will succeed in keeping the diabetes controlled without supplementing regular insulin. Certainly the use of protamine zinc insulin is unsafe for patients who are not cooperative and who are lax in the management of their diabetes. On the whole, results are superior to those obtained by regular insulin alone, especially in milder and moderately severe cases, although some patients with the severe type of diabetes are well controlled on protamine zinc insulin alone. For those in whom the slower acting insulin proves suitable, treatment is much simpler, the degree of control is better, and there is an increased sense of well-being in the great majority. There is a sense of freedom from continually having to plan the daily routine around injections of insulin at specific times. However, in all diabetic patients it is now possible by the suitable application of protamine zinc insulin, with or without unmodified insulin, to maintain normal blood-sugar levels throughout the day and night. Since the degree of control is better than it formerly was, one cannot take the attitude that the value of the new insulin is completely vitiated if more than one dose of insulin a day is used.

We do not now advise any diabetic patient who is in good health and well controlled on unmodified insulin and who does not object to taking multiple injections to change over to protamine zinc insulin. For use during infection, for precoma and coma states, for preoperative and postoperative management, we feel that unmodified insulin is superior. However, we have not attempted in this paper even to mention all of the clinical problems which arise in the management of the diabetic patient. Naturally protamine zinc insulin has not been in use long enough to ascertain whether there will be a decreased incidence of degenerative changes, such as arteriosclerosis, cataracts, etc., but with the better control of diabetes possible with the new insulin, there is every reason to believe that the prognosis in diabetes mellitus may become increasingly favorable.

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THE ORTHOPEDIC DIAGNOSIS OF CHRONIC LOW BACK PAIN

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Backache as a symptom of disability in the spine or neighboring structures constitutes one of the most frequent causes for which the patient seeks medical aid. This problem becomes very complex in many cases, and the fact that the medical profession at large tends to dismiss it as of little significance does not lessen its complexity. This attitude, of course, is wrong, because any disease which may occur anywhere in the skeletal system can occur in the spine.

For one to understand the pathology in the back and to be in a position to analyze symptoms relative to this area, one must have a comprehensive knowledge of the detail anatomy of all the bones, joints, ligaments, muscles and nerves that make up the structure of this part of the body. The spine is composed of joints just the same as the remainder of the skeletal system. Although these may exhibit a small range of motion they are in every other respect similar to other joints in the body. They are made up of articular cartilage, ligaments and synovia and they are supported by muscles as are all other joints.

In addition to the detail anatomy of the spine, there are certain other fundamental principles which we must bear in mind in any consideration of low back pain. In the first instance it should be remembered that the lower part of the back is undergoing an evolutionary change which is slow but sure. This has resulted largely from the spine assuming the vertical posture, the result of changing from the quadruped to the biped type of animal. The essential changes which have taken place during this change have been described very clearly by Sir Arthur Keith. They can be summarized as follows:

1. Enlargement of the pelvis and its component bony structure, including the sacro-iliac joints.
2. Shortening of the lumbar segment of the spinal column.
3. Increase in the musculature which supports the lumbar vertebrae.

These changes have left certain vulnerable regions, particularly the lumbosacral and sacro-iliac joints, which in many cases are inadequately developed to withstand the stress and strain to which they are subjected.

CLASSIFICATION

Classifications of lesions which produce low backache will have to be based on the individual physician's interpretation of the findings because there is no established classification at the present time. The etiologic grouping given below has formed a workable basis for the author.

I. Congenital Anomalies:

- A. Separation of neutral arch (may produce spondylolisthesis)
- B. Absence of lumbosacral disc
- C. Anomalies of the facets
- D. Sacrilization of transverse process of fifth lumbar or lumbarization of the first sacral vertebra
- E. Spina bifida

II. Posture

III. Trauma:

- A. Chronic strains
- B. Localized arthritis:
 - 1. Bodies of vertebrae
 - 2. Facets
- C. Old fractures
- D. Lesions of the intervertebral discs:
 - 1. Narrowing of the disc
 - 2. Rupture of the nucleus pulposa
 - 3. Direct injury to the disc
- E. Hypertrophy of the ligamentum flavum

IV. Infections:

- A. Specific
- B. Nonspecific:
 - 1. Infectious arthritis
 - 2. Fibrositis
 - 3. Combinations of infections and osteoarthritis

V. Metabolic Lesions:

- A. Osteoarthritis
- B. Osteoporosis:
 - 1. Disuse
 - 2. Senile
 - 3. Hyperparathyroid disease

VI. Neoplasms:

- A. Benign
- B. Malignant
 - 1. Metastatic
 - 2. Primary

VII. Malingery

VIII. Primary cord lesions

HISTORY

A complete history is most essential in getting an insight into the complaint of backache. This requires a careful follow-up of all the leads one can obtain while questioning these patients. Frequently the patient cannot recall anything concerning the original onset of the trouble, but by

a careful checking of all the answers often one can bring out the points which will recall the nature of the onset. This one point in most cases will simplify the entire problem of diagnosis. So often one may be prone to pass off backaches as lumbago, when in reality this term does not mean anything. If, on the other hand, a thorough history has been obtained, the examiner has already secured much of the data necessary for making a correct diagnosis.

The history of previous treatment which the patient may have received is often helpful in arriving at the diagnosis, as well as avoiding a repetition of some therapeutic measure. In order to give the examiner a definite approach to the problem a skeletal outline has been worked out. This outline gives only the basic points as analyzed by the author, and each subhead will have to be followed out individually.

A. The age and occupation of the patient

B. Pain:

- 1. Mode of onset
- 2. Duration
- 3. Location
- 4. Type and character of pain:
 - a. Continuous
 - b. Intermittent
 - c. Aching, boring, throbbing, or soreness
- 5. Effect of rest and activity
- 6. Relation to standing
- 7. Time:
 - a. Morning
 - b. End of day
 - c. Night

C. Soreness and stiffness—(If present is it worse upon arising, or after activity?)

D. Feet symptoms

E. Sciatica:

- 1. Continuous
- 2. Intermittent or recurrent:
 - a. Night or when lying on back with legs stretched out
 - b. Standing or during activity
 - c. Relieved by rest
 - d. Effect of coughing or sneezing
- 3. Bowel and bladder disturbances
- 4. Numbness in lower extremities or difficulty in walking

F. Symptoms relative to remote structures:

- 1. Genito-urinary tract:
 - a. Female pelvis
 - b. Prostate gland
 - c. Bladder and kidneys
- 2. Gastro-intestinal tract
- 3. Teeth and tonsils

G. Previous therapy

EXAMINATION

Routine and complete examinations should be carried out on all patients who complain of chronic back pain. By following this procedure routinely the underlying cause is often brought to light, whereas, it may be overlooked otherwise. Before the examination of the back, the patient should be completely disrobed, including the removal of the shoes and stockings. The female patient may be draped, but the entire back and hips should be exposed. The patient is first observed while walking and standing, when disturbances in posture and gait are noted. Following this the back and lower extremities should be examined completely in each of the positions of standing, sitting and in both the prone and supine positions. The later phase of the examination should be carried out on a firm table which is long enough for the patient to stretch out comfortably. An outline to be followed in the examination of the patient complaining of back pain may be divided as follows:

- I. Complete general examination
- II. Examination of the back:
 - A. Posture
 - B. Gait
 - C. Deformities of the lower extremities
 - D. Contour of the back
 1. Normal
 2. Kyphosis
 3. Lordosis
 4. Lateral curvature:
 - a. Scoliosis
 - b. Lateral deviation, or what is generally termed, sciatic scoliosis
 - E. General protection of back in moving
 - F. Tenderness:
 1. Localization
 2. Localized or diffused
 3. Degree of severity
 - G. Muscle spasm
 - H. Spinal movements:
 1. Guarded
 2. Actual restrictions
 - I. Gaenslen's test for sacro-iliac disease
 - J. Ober's test for shortening or spasm of tensor fascia lata
 - K. Evidence of sciatic nerve and sacral plexus involvement:
 1. Tenderness over the nerve
 2. Positive Lasègue's sign
 3. Decreased or absence of Achilles tendon response
 4. Sensory changes

III. Special examination:

- A. Focal check by specialist
- B. Routine laboratory
- C. X-ray findings

DIFFERENTIAL DIAGNOSIS

The roentgenogram is a valuable aid in differentiating many spine lesions. However, the examiner who depends on it as a routine method of making the diagnosis will encounter many pitfalls. The interpretations of the x-ray films and the correlation of these with the clinical findings become absolutely essential and require a knowledge of the normal variations in the skeletal structure of the lower back as well as the pathologic bone changes which may occur in this area. These changes have been tabulated in detail by Ghormley.

In the differential diagnosis of chronic low back pain a complete neurologic examination is of paramount importance. The fact that several sacro-iliac and lumbosacral fusions have been performed in the presence of cord tumors should impress one with the necessity for such an examination in all cases. This examination should be carried out by one who is thoroughly familiar with the findings in such lesions.

Many authors have attached much significance to congenital lesions of the spine. When present, they are evident enough to cause very little difficulty in arriving at a diagnosis. In this type of lesion of the pedicles, lamina, and transverse processes, the roentgenologic findings are definite.

Backache of postural origin is characterized by an aching and tired feeling on standing. Activity will frequently relieve rather than aggravate this pain. These symptoms are accompanied by poor posture with an increase in the forward lumbar curve while all other findings are negative. Often the etiologic factor, particularly in women, will be found to be high heeled, ill fitting shoes. Thus the feet are important enough always to be included in an adequate examination for back pain.

In traumatic lesions one can obtain the history that the symptoms have been initiated by an injury in nearly all cases. In addition the pain is localized and it is aggravated by activity. The tenderness is also localized and the spinal motions are fairly good unless the disability has been marked. In the infectious arthritic type, pain comes on gradually, accompanied by morning soreness and stiffness which subsides with activity only to become evident again with rest. An infection may become superimposed on a traumatic lesion. When this occurs the picture takes on the characteristics of the infectious plus the traumatic type.

Infectious lesions of the specific type can usu-

ally be recognized by the roentgenogram. This is especially true in tuberculosis. As a further aid to the differential diagnosis one often finds a cold abscess. This casts an oval shadow at the side of the lesion and may be pointing in the groin, buttocks, or iliac fossa.

Lesions of the pelvic organs in both the female and male very rarely cause back pain. However, they are the cause just frequently enough so that one has to keep them in mind. Pain with its origin in the pelvis is most often referred to the center of the sacrum and the sacro-iliac joints. It is characterized by an ache or pressure-like pain.

Osteoporosis will be found more frequently in individuals who have passed middle age. However, those cases which are manifestations of hyperparathyroidism may be found in young individuals. The blood chemistry is of primary importance in differentiating the latter group.

Malignant tumors of the vertebrae may confuse the diagnosis, especially in its early stages, because often the roentgenogram fails to visualize any change in the bone. When persistent night pain is present for which no skeletal origin can be found and the neurologic examination is negative, and which does not respond to the usual forms of treatment, one has to consider the presence of a malignant neoplasm. If the patients are checked after a few months the lesion will be discovered.

The malingerer always presents a diagnostic problem. Careful observation of the patient's reaction during the examination will result in exposure of most of these individuals. Their lack of anatomic knowledge makes it nearly impossible for them to fake an organic lesion. Almost invariably the findings are far more extensive than could be produced by a lesion of the spine.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

MANAGEMENT OF THE PROSTATIC PATIENT BEFORE AND AFTER TRANSURETHRAL RESECTION*

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Very little has been written regarding the pre-operative and postoperative management of patients undergoing transurethral prostatic resection for either benign or malignant hypertrophy. It is the purpose of this paper to give a resumé of those procedures which may aid the general practitioner in caring for these patients before they come to the hospital, and after they return home. Enough of the hospital routine will be included to preserve continuity.

PRE-HOSPITAL CARE

The diagnosis of prostatism having been made and conservative measures having failed, the sooner preparation for operation is begun, the less will be the operative risk and the loss of time to the patient. Preoperative preparation of these patients centers around first, achieving adequate bladder drainage; second, establishing proper water balance; and third, controlling infection. Certain general measures, in addition, have been found to be very helpful.

Drainage of the bladder is of prime importance. If the patient's residual urine is more than 75 to 100 cubic centimeters, or if his urinary frequency and difficulty are exhausting him, drainage of the bladder is almost obligatory. It can best be obtained by intermittent catheterization, or by an indwelling urethral catheter. Since the advent of the Foley self-retaining catheter, the latter method is very simple. The indwelling catheter should be irrigated at least daily; this can be done with boiled tap water by the patient. The catheter should be changed once or twice a week, and the urethra thoroughly irrigated to avoid periurethral complications. One-quarter grain morphine suppositories, used in conjunction with short hot sitz baths are excellent for those who tolerate a catheter poorly.

Many of these patients have been limiting fluids in order to reduce urinary frequency, and consequently are dehydrated. Therefore, one should insist on a daily minimum fluid intake of 3,000 cubic centimeters in order to restore water balance, and reduce or prevent infection. When facilities are at hand, uremic patients are greatly

*From the Department of Urology.

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Eighty-seventh Annual Session
of Your Society
Des Moines
May 11, 12 and 13, 1938

benefited by the daily intravenous administration of 1,000 cubic centimeters of ten per cent glucose in saline, or distilled water. Hartmann's solution[†],¹ given intravenously in daily doses of 500 to 1,000 cubic centimeters, induces rapid and remarkable improvement in patients with acidosis.

In the presence of mild infection, urinary antiseptics are not essential, but with increasing pyuria, any of the common ones should be used (urotropin, pyridium, serenium, or mandelic acid). More important than antiseptics is acidification of the urine to prevent overgrowth of urea splitting organisms. This can be done by eliminating citrus fruits and their juices, tomatoes, et cetera, and giving prune juice in large quantities. In addition, ammonium nitrate in doses of fifteen to thirty grains three times a day is beneficial. It should be noted that the latter, either with or without mandelic acid, is capable of producing a severe acidosis rapidly in those patients with uremia.

In addition to these specific measures, rest should be insisted upon. A general bland diet is best, and bowel elimination should be regulated. Digitalis is indicated in some patients, while coronary dilators, such as aminophyllin, in doses of one and one-half grains daily, are valuable in the treatment of most patients. Other physical defects can be dealt with as encountered. Vasectomy is a worthwhile procedure. It can be done in the office quickly, easily and without discomfort to the patient, and will prevent epididymitis in some patients.

Of all the above measures, however, adequate drainage of the bladder and adequate fluid intake remain the most important. These two alone will do more than any others to overcome and prevent uremia and infection, and thus give the patient a better chance to survive the operation and to obtain a good result from it.

HOSPITAL CARE

Upon the arrival of the patient in the hospital, the quantity of residual urine is determined, and in practically all cases an indwelling urethral catheter is introduced. The blood urea and creatinine values are estimated, and if values above normal are discovered, the plasma carbon dioxide combining power is calculated. Phenolsulphonphthalein tests are carried out routinely. Very few patients are cystoscoped, bladder and bladder neck disease being ascertained by means of cysto-urethrograms as described by Flocks.² If indicated, intravenous pyelography is done to ascertain the

presence of upper urinary tract disease. A routine complete physical examination is done, and existing cardiovascular complications are controlled as well as possible.

The patient is told to rest, and fluids, at least 3,000 cubic centimeters daily, are given orally unless he is uremic or acidotic, in which event some of them are given intravenously. The bladder is irrigated daily, and infection and other complications are treated as met. If there has been no prehospital preparation, the waiting period before operation is about five to eight days; but it may be longer if there is persistent uremia, active infection, or cardiovascular disease.

A subtotal resection of the prostate gland is attempted in one or two stages, depending on the size of the gland and the condition of the patient, and complicating features, such as vesical stone and bladder diverticulum, are dealt with at this time. Although the bleeding is completely controlled at the time of operation, a Foley hemostatic bag is introduced.

The postoperative hospital stay varies, but is rarely less than seven days. Immediately after operation, the bladder is irrigated at half hourly intervals for twenty-four hours after which continuous drainage is begun. If the course is satisfactory, the catheter is removed in forty-eight to seventy-two hours. No local instrumentation is carried out, unless indicated, for two or more days after the catheter is removed. If the residual urine is sufficiently low and the size and force of the stream are adequate, the patient can be discharged by the seventh postoperative day. Bleeding is usually slight and readily controlled by irrigation; rarely it is necessary to use rigid instruments to evacuate clots in the bladder or to fulgurate bleeding points. If the patient does not void well after the catheter is removed, his bladder is irrigated daily either until he improves or until further investigation is necessary. Then a progress cysto-urethrogram is done, and if obstruction is still present a second prostatic resection is done. However, if no anatomic obstruction is discovered, conservative measures, including irrigation, hot baths, antiseptics, et cetera, are continued as long as necessary.

AFTER-HOSPITAL CARE

The care of the patient after he returns home from the hospital is just as important as the preliminary preparation, and the principles of adequate bladder drainage, proper water balance, control of infection and of general supportive measures obtain as much as they did preoperatively. The same regime of urinary acidification and anti-

[†]Roughly, Hartmann's solution consists of equal parts of sodium acetate solution, Ringer's solution and water.

septics, 3,000 cubic centimeters daily fluid intake, daily hot sitz baths, a bland diet, rest and freedom from overwork and exposure is essential, because healing is not complete at the time the patient is discharged from the hospital. It should be borne in mind that the patient has an open wound in the prostatic urethra which is healing by secondary intention through granulation and subsequent epithelialization by growth from prostatic ducts and acini. There is necessarily more or less local edema, hyperemia, and separation of superficial sloughing tissue so that normally this process requires four to eight weeks for completion.

The overwhelming majority of patients are those whose stream is adequate, whose urgency and frequency are steadily decreasing and who carry little or no residual urine at the time of discharge from the hospital. They usually need only the type of care which has been outlined. On the other hand, a few patients while not having any anatomic obstruction, as shown by post-operative studies, will not have a perfect functional result during the first few weeks at home. This is usually due to excessive edema and slough with its concomitant infection about the bladder neck. These patients with mild pyuria and frequency should have irrigations two or three times a week with boiled tap water. Sometimes a solution of one-quarter to one-half per cent acetic, or phosphoric acid is preferable to tap water. Instillations, after irrigation, of some oily substance, such as 1/5000 metapen in oil, speed healing and give subjective relief.

Another small group of patients, also lacking a good functional result, is discharged from the hospital with known anatomic obstruction still present. This practice is followed in certain patients in whom conservative management is indicated for the time being. Most of these patients will progress to complete recovery with the treatment outlined. Those who do not, must undergo further operative treatment before a happy result will be obtained, so that one should be watching constantly for signs indicating the necessity of a second operation. These indications are: first, unabated symptoms beyond eight weeks; second, continued high residual urine; and third, persistent mild to moderate hematuria. This secondary trimming of the urethra is comparatively easy, and is done with little risk to the patient.

So far we have been discussing the management of the patient with an uncomplicated prostatic hypertrophy. There are, however, a number of

complicating factors, both general and specific to the urinary apparatus, which may be present. Prostatic resection may alleviate or prevent the progress of most of these general conditions, but will not, of course, help general disease such as senility, cardiac damage and arteriosclerosis. Some of the complications specific to the urinary apparatus are detailed below. In particular, the patients who have bladder diverticula now have considerable hope for the future. If the diverticulum has a wide open neck, removal of the prostatic obstruction is all that is necessary to promote adequate drainage. Previously the patients with poorly draining diverticula had to be in good general condition to withstand diverticulectomy. Now it is comparatively easy to enlarge the opening of the diverticulum by resecting tissue around the circumference of its neck. However, despite adequate drainage of the diverticulum, one must expect persistence of some of the urinary symptoms and pyuria.

Patients with refractory, generalized, urinary infections will be benefited by improved drainage, but will be doomed to more or less severe troubles for the rest of their lives. Nothing more can be done for these unfortunate individuals other than instituting symptomatic care and active therapy during exacerbations. Others with such severe kidney damage as to produce chronic uremia cannot expect complete recovery.

Patients who have carried 500 to 1,000 cubic centimeters of residual urine for weeks or months before operation, will continue to carry large amounts of residual urine for weeks afterward, because of their flabby, atonic bladder musculature. They will improve ultimately, but to insure this, the patient's bladder should be irrigated daily to prevent chronic over-distension. Short periods of indwelling, urethral, catheter drainage will help bladder contractility. In addition, every effort should be made to improve general tone. Whiskey, and other tonics are useful, but strychnine, in oral doses of one-thirtieth of a grain three times a day, is especially beneficial.

Late epididymitis yields to heat and support. If suppuration occurs, drainage alone may suffice, or drainage followed by later orchidectomy may be necessary. Stone formation is quite possible, but usually occurs in patients with other inciting complications. Cystolithotripsy and correction of the cause is indicated. Regrowth in benign prostate glands is rare, but will occur in three months to two years in malignant ones. Both types require second prostatic resection. Pain from met-

astasis of carcinoma may occur early or late; deep x-ray therapy helps remarkably in most patients, and may be repeated, but less relief is to be expected from later doses. While we have been discarding routine radiotherapy for carcinomatous prostate glands, it should be mentioned that a transient x-ray cystitis, lasting several weeks, is a troublesome complication of such treatment. Palliation is obtained by baths, irrigations, instillations of oil, and morphine suppositories by rectum. Delayed periurethral abscess is a rare complication; most of the patients with such a condition will drain spontaneously through the urethra, but some must be drained surgically. A troublesome fistula follows, but will heal if given time enough.

A few patients develop stricture, usually in the pendulous urethra; this is easily controlled by regular dilation. The diagnosis of stricture should be ruled out always in any postoperative patient complaining of the recurrence of his urinary symptoms.

Hematuria of mild to moderate degree is indicative of unhealed or incompletely removed prostatic nodules. The treatment is secondary resection. Occasionally a patient will develop sudden, severe hematuria with retention. This is a grave emergency and usually develops on the tenth to the fourteenth postoperative day. One should not temporize, but should immediately remove the clots with rigid instruments and the evacuator. Then a Foley bag urethral catheter should be introduced, and the other routine hemostatic measures be carried out. If this does not suffice, or instruments are not at hand, the patient should be returned as quickly as possible for transurethral fulguration.

In the final analysis much of the pre- and post-hospital care devolves upon the family physician and can be carried out in most cases without special equipment. Adequate prehospital preparation will greatly improve the patient's chances, decrease the hospital stay, and therefore, improve the service of the hospital to its clientele. The patient is still convalescent upon discharge from the hospital. Immediate cures should not, therefore, be expected. At least four to eight weeks of conservative home management should prevail before consideration of radical treatment.

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THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

THE WATERHOUSE-FRIDERICHSEN SYNDROME

F. P. McNAMARA, M.D., and
W. J. CONNELL, M.D., Dubuque

In recent years the significance of meningococcus septicemia has been more fully appreciated. Formerly it was generally believed that the meningococcus reached the meninges by direct extension through the cribriform plate of the ethmoid bone from the nasopharynx. More recently, and because of better bacteriologic methods, meningococcus septicemia has been reported with increasing frequency. Today many authorities favor the theory that the organisms first enter the blood stream from the nasopharynx and later localize in the meninges. It is also recognized that as a result of an overwhelming meningococcemia death may occur before meningitis becomes evident clinically or even at necropsy.

The association of a fulminating purpuric or petechial rash with bilateral adrenal hemorrhages has been recognized for many years and has been known as the Waterhouse-Friderichsen syndrome. At first the etiology of this condition was unknown. Later and on the basis of fragmentary studies it was ascribed to various types of organisms. More recently and because of more intensive bacteriologic investigations the meningococci have been found either in the skin lesions or in the blood stream in the majority of cases. Therefore, today it is generally believed that the syndrome is really an acute fulminating meningococcemia associated with adrenal hemorrhages.

The cases to be described were examples of unexpected deaths in two young children. Because of the short illness in each case the etiology was undetermined. Nevertheless because of the clinical course, the characteristics of the rash and because of the presence of bilateral adrenal hemorrhages at necropsy in each case we believe they were examples of the Waterhouse-Friderichsen syndrome.

CASE REPORTS

Case 1. The patient, a very well developed and nourished white boy, four years of age, was seen at his home the night before death. At that time the temperature was 103 degrees. There was a faint macular eruption over the trunk and the child had a slight mucoid discharge from the nose.

Up to the onset of the present illness the child had been in perfect health. Since he did not appear extremely ill it was thought that he was probably developing measles or scarlet fever. General instructions were given to the parents and they were told that he would be seen again on the next morning. During the night the patient died. The necropsy was done five hours after death and after the body had been embalmed. Externally there was a diffuse, dark red, macular eruption involving the entire body but most marked over the trunk. In some areas there were hemorrhages into the skin. Internally, in addition to acute congestion and petechial hemorrhages of each lung, the most important findings were hemorrhages of each adrenal gland. The latter were four times the normal size because of the hemorrhages. The brain was congested and also showed a rare petechial hemorrhage, but no evidence of exudate was found grossly or microscopically.

Case 2. The patient, a white girl six years of age, was seen at her home the night before death when the chief complaint was a profuse watery diarrhea. When seen there was a marked prostration and a faint macular eruption over the trunk. The temperature was 104 degrees. The parents stated that up to the time of the illness the child had been well. There was a history that she had been in the habit of going to a neighboring municipal dump and it was thought possible that she had eaten some toxic food. On this theory she was given castor oil and it was expected that she would recover. However, she died during the night and approximately eighteen hours after the onset of the illness. The necropsy was performed about six hours after death and after the body had been embalmed. Externally a diffuse, purple, macular eruption involving the arms, thighs and trunk was still evident. Internally there was a generalized lymphadenitis and both the lungs and brain showed petechial hemorrhages. The thymus was moderately enlarged. The most important findings were bilateral adrenal hemorrhages. Each organ was three or four times its normal size due to the hemorrhage. There was no evidence of exudate on the meninges on gross and microscopic examinations.

GENERAL DISCUSSION

The association of a fulminating purpuric rash with bilateral adrenal hemorrhages has been recognized since the beginning of the present century. Waterhouse¹ in 1911 reported one case and was able to collect fifteen from the literature. Friderichsen² in 1918 made an inclusive review of the literature and since that time the condition has been known as the Waterhouse-Friderichsen syn-

drome. Until 1916 the etiology of the condition was unknown but at that time MacLagan and Cooke³ isolated the meningococcus in two cases. Since that time, while other organisms have been reported present, the meningococci have been isolated in a high percentage of cases and Craster and Simon⁴ have recently stated that "the Waterhouse-Friderichsen syndrome is really acute fulminating meningococcemia associated with adrenal hemorrhages. It cannot be distinguished clinically from fulminating meningococcemia; the finding of adrenal hemorrhages on postmortem examination serves as the differential diagnosis between the two conditions."

At the onset the clinical picture resembles that of any acute infection. Most cases occur in young children of either sex, and usually the history indicates a sudden illness in a child who had been previously well. Chills occur but are not frequent. The temperature is septic in type and varies between 103 and 104 degrees or even higher. Vague abdominal pain, sometimes accompanied by diarrhea also occurs. Vomiting of moderate amounts and of a non-distinctive fluid is frequent. Early delirium, restlessness or generalized convulsions indicate involvement of the central nervous system. Later the child becomes lethargic and prostration is marked. Within a few hours after the onset marked cyanosis becomes evident and with rapid respiration may be thought to be due to pneumonia. Soon after the appearance of the cyanosis a generalized petechial eruption which is bluish red in color is noted. The color does not fade on pressure and the petechiae often involve the conjunctivae. Very quickly there is an associated macular purpuric rash which gives the skin a livid appearance. On examination extreme prostration is evident. The breathing is rapid and shallow. The pulse curve is parallel to that of the temperature. Aside from the rash and possibly a few moist râles in the lungs posteriorly and at the bases, the general examination is negative. Cervical rigidity is usually absent and the reflexes are unchanged as a rule. The entire clinical course may last only twelve to forty-eight hours.

The diagnosis can be definitely made only by the demonstration of the meningococci. McLean and Caffey⁵ were able to demonstrate the organisms in the skin lesions of 83 per cent of their cases of epidemic meningitis. Boone and Hall⁶ have reported finding meningococci in blood smears stained by Wright's stain. Therefore, it is quite possible that they may be found in blood smears from the skin lesions and the procedure should be carried out in all suspected cases. The

blood count varies between 15,000 and 80,000 leukocytes with about 90 per cent polymorphonuclears. The spinal fluid may be entirely negative or show only a slight increase of the cells and possibly a few organisms. Therefore, unless positive, it cannot be relied upon in making the diagnosis. From this explanation it is evident that the clinical diagnosis is an exceedingly difficult one to make. Possibly if the condition is kept in mind and more intensive studies made to demonstrate meningococci in cases with fulminating petechial or purpuric rashes, hyperpyrexia and marked prostration, it will be made more often.

The treatment demands the early intravenous administration of meningococcus serum. This is obviously true in cases in which the meningococci have been demonstrated and would also seem logical in those with the above clinical picture in which no other etiologic agent is demonstrated. Adrenal cortex extract, intravenous dextrose and saline injections and blood transfusions have been recommended. Because of the overwhelming infection and the rapid clinical course the prognosis is very serious and the majority of the cases have terminated fatally.

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COMING MEETINGS

Because we feel that some of the physicians in Iowa may be interested in a number of national meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Iowa State Medical Society, Eighty-seventh Annual Session, May 11, 12 and 13, 1938, Des Moines, Iowa.

American Neisserian Medical Society, Fourth Annual Session, May 16 and 17, 1938, at the Public Health Auditorium, Washington, D. C. A symposium on sulfanilamide, under the direction of Dr. Perrin H. Long of Johns Hopkins Hospital will be a feature of the program.

Associated Harvard Clubs, Forty-first Annual Meeting, May 20, 21 and 22, 1938, at the Palmer House, Chicago, Illinois. Medical School Seminar, May 21. Willard O. Thompson, M.D., chairman of the Medical School Committee, 700 North Michigan Avenue, Chicago, Illinois.

American Association of Industrial Physicians and

Surgeons, jointly with the Midwest Conference on Occupational Diseases, June 6-9, 1938, at the Palmer House, Chicago, Illinois.

American Medical Association, Annual Session, June 13 to 17, 1938, San Francisco, California.

American Board of Ophthalmology announces the following examinations during 1938: Washington, D. C., October 8, and Oklahoma City, November 15. Applications must be filed with the secretary of the organization sixty days prior to the date of examination.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28-30, 1938, at the Hannibal-LaGrange College, Hannibal, Missouri.

ASSOCIATION AWARD

The following rules governing the award of "The Foundation Prize" of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, have been issued by that organization:

1. The award which shall be known as "The Foundation Prize" shall consist of \$500.00.

2. Eligible contestants shall include only (a) internes, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal Surgery.

3. Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant.

4. Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis.

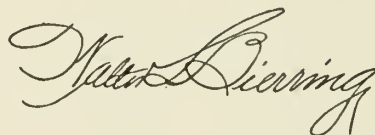
5. The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors.

6. All manuscripts entered in a given year must be in the hands of the Secretary before June 1st.

7. The award will be made at the annual meeting of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation.

8. The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting. Write James R. Bloss, M.D., Secretary, 418 Eleventh Street, Huntington, West Virginia.

STATE DEPARTMENT OF HEALTH



Technic of Antisyphilitic Injections

JAMES P. SHARON, M.D., Associate Director
In Charge of Venereal Disease Control

The care of a patient afflicted with syphilis is sometimes spoken of lightly by the physician and the words "intravenous neoarsphenamine" and "intramuscular bismuth" are for the most part used with the assumption that these procedures are "all in the day's work." Every physician knows of the pain and sometimes crippling effects of extravasated neoarsphenamine, and recalls readily the occasional difficulties encountered in entering the vein. Although technic cannot readily be learned from the printed page, it is hoped that information contained in the following paragraphs may be useful in reducing to a minimum the untoward reactions which attend accidents and errors in technic.

INTRAVENOUS ADMINISTRATION OF ARSENICALS

Preparation of Solution

Prepare no more of the arsenical solution than can be administered within an hour. Into a small, sterile beaker or medicine glass, place about two cubic centimeters of sterile, cool, distilled water. Pour in the contents of an ampoule of neoarsphenamine and add the balance of the ampoule of distilled water. The mixture of arsenical and distilled water should not be stirred, agitated or aerated in the effort to hasten the solution; such procedure is likely to increase toxicity of the drug.

Preparation of Patient's Arm

The arm may be painted with an accepted antiseptic solution, such as iodine, from the point about two inches above the cubital fossa to several inches below it. Alcohol aids in the removal of discoloration and in maintaining antisepsis. The tourniquet is applied snugly but only moderately tight. It is not necessary to shut off the entire circulation in order to distend a suitable

vein. If no veins are visible, a "smart slapping" with the fingers of the operator will often bring out a usable vein.

Intravenous Technic

A short, beveled needle of about 20 or 21 F. should be used. It must be sharp and sterile. The stylette should be in place while in the sterilizer. The most readily accessible veins are the median cephalic or median basilic at the cubital space (bend of the elbow.) The skin below the point selected for insertion of the needle should be held taut by the fingers of the opposite hand. The needle, beveled edge upward, is inserted through the skin and into the lumen of the vein. Never attempt to push the plunger unless you are positive that the needle is actually in the vein. Make certain of this by pulling back the plunger and drawing several cubic centimeters of blood into the syringe. Actual injection of the contents can then take place. It is not necessary to ask the patient if it hurts; if the needle is not in the vein, he will tell you.

INTRAMUSCULAR ADMINISTRATION OF HEAVY METALS

The idea that intramuscular injection of a heavy metal is a simple procedure should be dispelled. It is true that the technic is not as exacting as that of intravenous administration. Bismuth in suspension, when injected according to the following technic, will cause very little pain at the time of injection, will not leave a large indurated area and will ensure a procedure which can be followed at weekly intervals for many months without undesirable effects.

The choice of the needle is important. It should preferably be a 20 gauge needle, from 1.5 to 2.5

inches long, depending on the thickness of the adipose layer of the buttock. The syringe and needle should be sterilized by boiling. The point of the needle should not be bent or hooked. The site of injection is preferably the upper, outer quadrant of the buttock. The patient should always lie in the prone position, with toes together. After preliminary sterilization of the skin, the needle is inserted with a short, sharp stroke, in a direction slightly inward and downward from the vertical. Even if no blood appears at the hub, aspiration should always be done as soon as the syringe is attached and before any material is injected. "The injection of an insoluble salt (especially bismuth) in oil suspension or solution into a vein is always accompanied by distressing symptoms of pulmonary oil embolism and may end fatally."* If blood appears, even in minute quantity, the needle should be withdrawn and inserted in a different place; otherwise one may proceed. The injection of the suspension or solution should be followed by the injection of one cubic centimeter of air to clear the needle and prevent leakage along the needle track. In injecting air, it is necessary to remove the syringe from the hub of the needle.

Minimizing Discomfort

There will be little or no pain after the injection, provided the site is massaged for one and a half to two minutes after completing the injection. By using first one buttock and then the other, alternating each week, and by observing the above mentioned precautions, there should be no untoward effect and very little discomfort. The minimizing of the discomfort insures the return of the patient for regular treatments. The massaging of the buttock following intramuscular injection, has the added advantage of preventing subsequent bleeding.

SUMMARY

1. Use sharp, short, sterile, needles for administration of antisyphilitic drugs. Leave stylette in needle when not in use and during sterilization.
2. Do not attempt an intravenous injection unless you are sure the needle is in the vein. Do not attempt an intramuscular injection unless you are sure the needle is not in a vein.
3. Do not allow patient to leave office unless you are sure there is no bleeding.

*Moore, J. E.: *Modern Methods of Treatment*, C. C. Thomas Publishing Company, Springfield, Illinois, 1934.

ANOTHER TICK SEASON AT HAND

Another season is at hand for activities of the common dog tick, *Dermacentor variabilis*. Judging from the experience of the past five years, it is possible that one or more cases of Rocky

Mountain spotted fever may be reported to the State Department of Health before the printing of the June number of the JOURNAL. The following table indicates the date of onset of the first case of spotted fever reported for each year of the period 1933-1937 inclusive:

Year	First Reported Case			
1933	Onset of symptoms	June	5	
1934	" " "	June	17	
1935	" " "	June	2	
1936	" " "	August	16	
1937	" " "	May	28	

The first of sixteen cases of Rocky Mountain spotted fever reported in Iowa in 1937, a boy eight years of age, had headache, fever and vomiting. Small macular areas appeared on wrists and ankles, followed by generalized eruption. The child showed some rigidity of the neck, had a positive Kernig's sign and was drowsy. Although illness resembled influenza, meningitis, measles and smallpox, the condition was correctly diagnosed as Rocky Mountain spotted fever, based on the clinical course and on a positive agglutination test (Weil-Felix reaction) carried out at the State Hygienic Laboratory.

Physicians who may have the opportunity to observe cases or suspected cases are requested to report promptly to the State Department of Health.

TRICHINIASIS OUTBREAK IN O'BRIEN COUNTY

Eight cases of trichiniasis were reported to the State Department of Health in April by Drs. E. Pfeiffer and W. C. Hand of Hartley, O'Brien County.

Illness affected seven members of a farm household and a child relative living in town. Field investigation was made by representatives of Health District No. 1, and the State Department of Health, in cooperation with attending physicians. It was learned that four hogs were butchered on the farm on March 1. Mrs. R. had onset of symptoms with diarrhea and abdominal discomfort on March 7; she had eaten some of the raw pork after adding salt, pepper and spices. On March 11, the mother, father and five children began eating smoked sausage. All members of the family became ill March 21, with influenza-like symptoms and with diarrhea, muscular pains, puffiness of eye lids, swelling of legs and body, urticarial lesions and itching. Symptoms and signs continued for a period of over four weeks; all of the patients are convalescing satisfactorily at this time. Some of the ground pork was given to relatives who lived in town. A little girl in the home

concerned became sick after tasting some of the uncooked meat; the father and mother ate only cooked meat and escaped infection.

Some of the sausage from the farm was sent to the State Hygienic Laboratory. Examination of the meat was made by Dr. L. O. Nolf, Parasitologist, Zoology Department, University of Iowa. The sausage was found to be heavily infested with larvae of *Trichinella spiralis*. Dr. Nolf estimated that 27,000 larvae were present in five ounces of sausage, about 180 larvae per gram. Rats have been a pest on the farm during the past two years. Further studies are being conducted to determine the part played by rats in the transmission of infection to hogs and in turn to human beings who are exposed through the eating of uncooked trichinous pork.

REPORTING OF SYPHILIS IN 1938

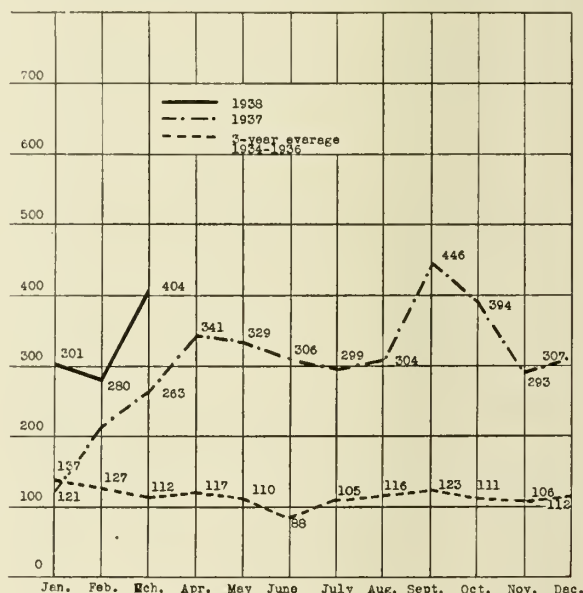
The reporting of syphilis for the early months of 1938 shows improvement in the completeness of notification of cases as compared with a year ago and particularly as compared with the average numbers for the three year period 1934-1936. During January, February and March, 1938, reported cases of syphilis totaled 985, the figure for the same period in 1937 being 598 and for the first three months of the preceding three year period, 376. (See accompanying line graph, Figure 1.) The spot map (Figure 2) shows the distribution according to counties of cases of syphilis reported to the Iowa State Department of Health during the months of January, February and March, 1938.

The success attending measures for the control

of syphilis and gonorrhea is definitely dependent upon the thoroughness of notification of cases. It is only through complete reporting during the months of this year that an adequate base-line of incidence of infection can be established. Such a base line is essential as a means of gauging

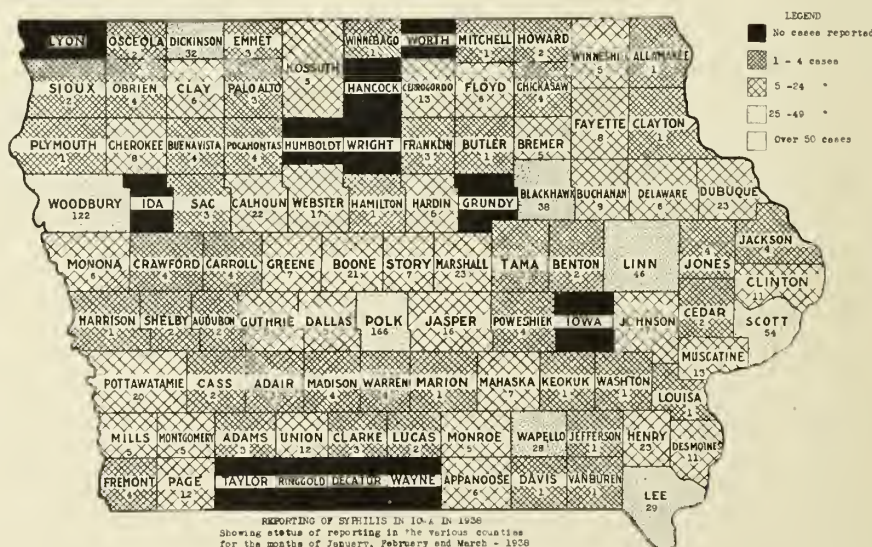
Fig. 1.
SYPHILIS AS REPORTED IN IOWA

Line graph showing number of cases reported during first three months of 1938, during the months of 1937 and the average number of reports by months for the three-year period 1934-1936.



progress which will be made in the years to come. Discovery of new cases and completeness of reporting are directly dependent upon sustained interest and unwavering support of all attending physicians.

Fig. 2.



The JOURNAL of the
Iowa State Medical Society
ISSUED MONTHLY

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SUBSCRIPTION \$3.00 PER YEAR

Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII MAY, 1938 No. 5

POLIOMYELITIS PROPHYLAXIS

In view of the approach of the season when poliomyelitis is epidemic in the middle west, it seems appropriate to review the clinical use of zinc sulphate spray in prophylaxis. The majority of research workers in infantile paralysis have concluded that the atrium of infection is through the olfactory area of the nose, along the olfactory nerves and to the central nervous system. Gebhardt and Schultz demonstrated that spraying the noses of monkeys with one per cent zinc sulphate protected the majority of the animals from infection after nasal instillation of the virus. Peet, Echols and Richter later described the technic of applying zinc sulphate solution to the human olfactory area.

During the poliomyelitis epidemic in Toronto in the fall of 1937, the clinical application of this method of prophylaxis was employed, and the results have been reported by Tisdall, Brown and their co-workers. A group of 4,713 children was sprayed on two occasions at intervals of twelve days. The work was done by forty-four otolaryngologists in a total of eighty-nine clinics. A representative control group of 6,300 children was obtained from the same residential areas. Among the 4,713 children who were sprayed, eleven cases of poliomyelitis occurred during the interval from the first spraying to thirty days after the second spraying. In the control group of 6,300 children, eighteen cases occurred during the same period. The attack rate in the period seven days after the first spraying to ten days after the second spraying was 1.7 per 1,000 in the sprayed group, and 2.1 in the control group; in the period seven days after the first spraying to twenty days after the second spraying, the rate was 2.1 in the sprayed group and 2.4 in the con-

trol group; and in the period from seven days after the first spraying to thirty days after the second spraying, it was 2.1 in the sprayed group, and 2.9 in the control group.

The conclusion reached by the experiment is that there is no evidence of the protective value of a nasal spray of one per cent zinc sulphate, even though performed by otolaryngologists with proper equipment for application to the olfactory area. The careful manner in which this controlled experiment was conducted reflects credit on the profession of Toronto, and provides an adequate appraisal of an experimental prophylactic measure. Park and his colleagues in New York have demonstrated by carefully controlled studies that convalescent serum possesses no value in prophylaxis or in the therapy of poliomyelitis. Other clinicians feel that convalescent serum is useful in the treatment of the disease, and that every patient is entitled to its benefits.

One cannot face the poliomyelitis season with much enthusiasm; nor can one offer much encouragement to parents. It must be admitted that so far the science of medicine has little to offer in the prevention of the treatment of this dread malady.

GOVERNMENT IN MEDICINE?

For some time now the attention of medical men has been sharply attracted to various movements which many interpret as a growing interest on the part of the federal government in medical affairs. That this interest may sooner or later culminate in some sort of a legislative edict from Washington is more than a mere suspicion. It becomes a probability when one reviews the trend of the reports of studies (Committee on the Costs of Medical Care, American Foundation Studies in Government, National Health Survey, etc.), which have appeared from time to time relative to the adequacy of medical service which our people are receiving. It becomes even more probable in view of the resolution introduced into the United States Senate on April 11 by Senator Wagner of New York, calling for an investigation of the costs of medical care in relation to ability to pay, and means by which the health of our people may be maintained and improved.

The resolution (S. Res. 265) provides for the appointment of a committee of three senators and an authorization for the expenditure of \$50,000 in conducting the investigation. An editorial in the *Journal of the American Medical Association* (April 23, 1938, page 1372) points out the similarity of the five points in Senator Wagner's resolution to the Principles and Proposals of the Com-

mittee of 430 Physicians. It will be recalled that these Principles and Proposals first came into prominence when they were voted down in the House of Delegates at Atlantic City, after having been introduced by Dr. Samuel J. Kopetsky, official delegate from the New York State Medical Society. The five points which the senatorial committee is to include, but not be limited by, are as follows:

1. Expansion of federal aid to and cooperation with state and local public health services and the coordination of such services with the work of private institutions and groups.

2. Extension of governmental aid, by cooperation of state and federal governments, in support of (a) adequate medical care for the medically indigent; (b) medical education, research, investigations and procedures for raising the standards of practice in preventive and curative medicine; and (c) private institutions and groups rendering hospital, laboratory, diagnostic and consultative services to the medically indigent.

3. Operation of existing public and private health insurance or group health systems, with particular reference to the manner in which they were instituted and are now functioning, the method of financing, the nature and extent of benefits, and the results achieved.

4. Utilization of professional experts in the planning, direction and execution of the foregoing measures.

5. Any other subject, matter, or thing adjudged by the committee to be relevant or germane to the foregoing subjects of inquiry.

In the House of Representatives, Congressman Doughton of North Carolina has introduced H. R. 10241 for an appropriation of \$3,000,000, in addition to the \$3,800,000 now available for the fiscal year ending June 30, 1939, for extending and improving maternity care and the care of infants. The proposed measure would provide additional funds during the next four years as follows: for the fiscal year ending June 30, 1940, \$8,000,000; for 1941, \$12,000,000; for 1942, \$16,000,000; and for 1943, \$20,000,000; and for each fiscal year thereafter such additional sums as may be needed. In the year 1943 then the state of Iowa would receive (if granted its proportionate share) somewhere between \$200,000 and \$300,000 for maternal and child health alone, when the appropriation for the entire State Department of Health for years has not exceeded \$75,000 annually.

In the meantime the American Medical Association is conducting its own analysis of medical and health needs. The Board of Trustees has appointed an Advisory Committee on Supply of Medical Service composed of Dr. William F.

Braasch, Chairman, Dr. A. J. Chesley, Dr. Walter F. Donaldson, Dr. Holman Taylor, Dr. John H. Fitzgibbon, Dr. Charles Gordon Heyd, Dr. A. T. McCormack, Dr. William J. Carrington and Dr. James S. McLester. The Committee held its first meeting on March 24 and issued the following statement:

"The Trustees of the American Medical Association appointed the Committee on Supply of Medical Service to serve in an advisory capacity to the Board of Trustees and to the Bureau of Medical Economics of the American Medical Association in the conduct of a nationwide study of medical and preventive medical needs, with a view to developing a more complete distribution of medical service. Although previous surveys indicate the existence of a problem in the supply of medical service in various localities, the failure of such surveys to provide an experienced medical analysis of what is essentially a medical problem indicates the need for such a study under the leadership and with the help of the medical profession.

"The Committee on Supply of Medical Service will endeavor to stimulate action by the various state medical societies and through them the county medical societies to determine accurately the need for medical service in each county, including that available for persons who are indigent and those of various levels of income. It will evaluate the quality of medical service rendered. It will determine, if possible, the causes of failure of individuals or families to secure medical services with the facilities available in the county concerned. Members of the Committee individually will do their utmost to stimulate interest of the medical profession in this venture so that individual physicians, as the ultimate factor in the delivery of medical service, will participate in the securing of data, and give of their best advice in determining the means whereby wider distribution of adequate medical service may be had by all the people.

"The Committee will endeavor to secure the cooperation of public health officials, dentists, hospitals, representatives of community chests, collateral nursing, pharmaceutical, social service and similar groups in each county so as to present in its report a complete factual picture of the situation as regards the supply of medical service from various points of view. As soon as the definite needs are established in any community, the Committee will aid the state medical societies and through them the county medical societies in developing suitable local plans for meeting these needs with the facilities available, or to suggest means of enhancing such facilities in order to meet the needs."

Thirty-six states have already started work on the study. Iowa is just now beginning the task of evaluating the supply of medical service in various parts of the state. It is to be hoped that all the states will join wholeheartedly in this comprehensive undertaking advanced by the American Medical Association through its Board of Trustees. It is our opinion that the extent to which the federal government will continue its threatening attitude of interference will be determined by the results of this investigation if the local medical groups can and will provide for existing needs in the various sections of the country. Obviously then, with this ideal in mind, the project calls for the support of every member of organized medicine.

THE PLAN FOR A STUDY OF MEDICAL CARE*

In the past many studies have been made by various agencies to determine the need for medical care and the adequacy of the care provided at the time by the medical profession. These studies have been conducted by various foundations and governmental agencies and have been, almost without exception, carried on by men untrained in medicine. In the recent survey made by the government the actual data were procured by a canvass in different regions of the country by WPA workers. The results of these surveys have always been the same; that is, that the underprivileged citizens as a whole have more sickness and receive a little less medical care than the well-to-do members of society. This is always used as a basis for a demand that someone provide more medical services for these individuals in the low income bracket. There seems to be little said about the fact that the poor housing, insufficient nourishment, and inadequate clothing are major factors in producing this increased illness and that no amount of medical care would, to any great extent, decrease the actual illness. Until the economic and social conditions of these people are improved an unlimited medical care would only slightly reduce illness, the infant mortality rate, and other conditions. It has never been possible to substitute good medical care for malnutrition in babies and prospective mothers, nor to prevent pneumonia due to overexposure of a cold, hungry individual, nor to persuade the pregnant woman to see the physician frequently in order to prevent the onset of toxemias of pregnancy.

The medical profession has always doubted the value of these surveys which have been used as the basis for numerous recommendations for improvement in the provision of medical care. The

basis for the determination of illness, for the need and adequacy of medical care, has depended on the opinion of the untrained worker, or the unsupported statement of the persons interviewed in regard to the amount of money they have paid during the preceding year for medical care. The inaccuracy of this form of securing information is shown by one study where the cash expenditure for medical care was taken in a medium sized community. At the same time the physicians in that community gave, from their records, the value of all services rendered to the individuals whether paid or unpaid. It is interesting to note that the patients' estimate of the amount of cash paid was 150 per cent of the total charges made by the physicians to those patients. If other data in the same survey were equally inaccurate the study was of no value whatsoever. These factors have led the American Medical Association to feel sure that there is need of a survey made by the profession itself to try to determine the need for and adequacy of medical care.

Under the direction of the Bureau of Medical Economics of the American Medical Association such a survey is now being instituted. The general outline has been made, questionnaires have been printed and distribution to the various state societies for actual conduct of the survey has been started. In the last few weeks a series of articles explaining the project has been printed in the organization section of the *Journal* of the American Medical Association. The actual work of the survey in each county will be under the direct supervision of the county medical society. It will require a great deal of work and, to be successful, the cooperation of every individual member. Material will soon be sent to the county society secretaries and it is requested that a committee be appointed to give the material careful study so that the most accurate and complete study possible can be made. Under the plan material will be collected through questionnaires covering the various phases of medical practice. These will be turned in to the county society committee who will condense the material into summary form, retaining one copy of the summary, sending one to the state medical society and one to the American Medical Association. A study of the various state hospitals, asylums, and the departments of health will be made by a committee from the state society and will be added to the county summaries. One of the most important portions of each blank is that which pertains to any failures which may be found in either the adequacy or the utilization of medical services.

Each physician is asked to give careful consideration to the blank concerning his private prac-

*Prepared by the Medical Economics Committee.

tice and his participation in various health programs. His work in immunization projects, in free clinics, and the amount of work which he does for private patients for which they are unable to pay is determined. In obstetric practice the amount of prenatal care given various patients in private practice is requested. The individual physician is also asked to give his knowledge of any inadequacy of medical care in his county, the number of patients unable to secure medical care when needed, and his opinion as to possible methods to supply needed care to these individuals. A complete questionnaire of this type, from a majority of the physicians in the United States, will give an accurate, statistical record of the free medical services given, to replace the former inadequate opinions which have been used in the past as a basis for plans suggested for supplying medical care.

Hospitalization, nursing service, health department activities, welfare and relief agencies, school and college health services, and fraternal insurance or group health organizations will be studied in a similar manner. The final analysis of this immense amount of material, gathered largely from actual statistics which can be verified, will give a knowledge of the medical problem which has never before been secured. This material can then be used as the basis of an intelligent study of the problem, and plans can be formulated for providing needed medical services where they have been found to be inadequate.

The Medical Economics Committee of the Iowa State Medical Society is now studying the various questionnaires, and working on plans for the conduct of the study in Iowa. It is requested that the members of the society keep this project in mind, read the material as it appears in the *Journal of the American Medical Association* and be prepared to cooperate when the county society starts its study. A vast amount of work will be necessary to make this study a success, but the results will be worth many times the expended effort. The completed study will enable organized medicine to come before the government or other agencies studying this problem with an accurate and complete summary of medical services available and medical needs. We will be able to tell whether a stated deficiency exists, where it exists and what will be the best methods of providing for that need. For too long we have been taking our stand on questions of medical economics as they relate to the supply of and demand for medical services without being able to prove our position with statistical studies. We feel we are right in our stand on these matters, but the other man feels he is also right and has had the advantage

of being able to quote some statistics, more or less accurate, to prove his point. As a result we have often not fared well in the discussion. Our best interests, and even more important the best interests of the public, will be served by making this a complete survey of the subject of medical care in the United States.

With the presentation of this matter at the annual meeting of the House of Delegates of the Iowa State Medical Society and the approval of the study, work should start at once and the material be collected as rapidly as possible. Our state is well organized medically; a large proportion of the practicing physicians belong to the State Society and we should have a report which will be the equal of that produced by any state society.

THE POSTMORTEM EXAMINATION*

The percentage of autopsies obtained by the hospitals of Iowa is lamentedly low. In seeking to correct this state of affairs it is first necessary to analyze the objections to necropsies. One of the primary reasons for failure to obtain permission for necropsy is that the medical profession, while taking upon itself the task of selling the idea of necropsy to the public, has not sold this idea to its own members. In the second place, there are certain emotional and rarely religious obstacles which are present in the minds of the surviving relatives. A third equally important reason is the occasional strong objection of the mortician.

In considering the correction of these failures, we must review the evident advantages of autopsies. As physicians it is our duty to humanity to help develop medical knowledge. By means of a necropsy we can examine and determine the exact cause of death with reference to familial tendencies and occupational hazards. By examining the relationship of the final disease to former illnesses and injuries, we may aid in collecting insurance for the relatives and in making more accurate vital statistics. Obviously it is important to determine the extent of the disease and necropsy is the only method by which this can be done with a minimum of doubt. From the medicolegal standpoint, a necropsy should be performed by an unbiased hospital pathologist. In addition to these reasons for performing autopsies, we may add the occasional discovery of rare diseases. Likewise, the necropsy is profitable in the evaluation of treatment and as an aid to research. In combating the emotional upset of the relatives at the time of the demise of a loved one a sympathetic understand-

* Editor's Note—This article has been especially prepared for the JOURNAL by Dr. D. H. Kaump, Pathologist, Iowa Methodist Hospital.

ing on the part of the physician in charge will go far toward obtaining the permission which is sought.

The objections of the morticians seem to be the most difficult to iron out and it may well be that we as physicians are largely responsible for the antagonistic attitude which morticians hold toward necropsies. The arrogance with which a pathologist addresses the funeral director and his evident unwillingness to cooperate immediately bring about a feeling of antipathy between the two. The most cogent arguments of the morticians against necropsies are generally not based upon the lack of understanding of the value of necropsy, but rather upon the antagonism which the physicians themselves have fostered. We might list the actual criticisms which morticians present and attempt a logical correction of these. In the first place embalming of necropsied bodies is extremely difficult, particularly after carelessly conducted examinations. Embalming after necropsy requires additional fluid, additional help and more time, and for these reasons throws an added burden of expense on the funeral director. However, properly autopsied bodies need not present all of these difficulties and for this reason a uniform technic carefully observed, may partially eliminate this objection.

The technic which was described by the joint committee representing the New York Academy of Medicine, the New York Pathological Society and the Metropolitan Funeral Directors Association might well be followed. The abdominal-thoracic incision should be Y shaped, and in the female particularly the transverse incision must be below the breasts. The scalp should be opened by an incision behind the ear which passes over the vertex. The skull is separated in two or three intersecting lines which meet in an angle behind the ear, the anterior incision beginning at the level of the hair line. The pathologist should provide against leakage from the cranial cavity by placing a plug of cotton in the foramen magnum and should ligate the carotid and vertebral arteries as well. In the chest, the innominate, the left common carotid and the left subclavian arteries, as well as the iliac arteries in the abdomen, must be preserved for subsequent adequate injection. Following autopsy the skin should be sutured with a small needle and the body should be delivered to the embalmer in a clean condition. If the mortician so desires, he should be allowed the use of the necropsy room for the preparation of the body for burial.

The second most important objection of the mortician might be the methods which are sometimes used in securing necropsy permissions. If

fear and intimidation are used in securing permission or if the threat of referring the case to the medical coroner's office is used, there is ample evidence that we have failed in presenting our picture clearly. The second phase of this objection comes when we have permission to do a limited type of examination. For instance, if the physician has secured permission for necropsy which he says will be limited to a small abdominal incision and if he should later desire to extend this incision and include the entire body in his incision, it is the mortician who suffers the consequences because it is to him that the relatives have entrusted the care of the body. Most often the mortician has no knowledge of the limitation of permission which has been promised and merely takes the physician's word. Here again it is obvious that the physician must stay within the limits of the permission granted. To alleviate some of this misunderstanding, uniform necropsy permits can be used upon which the limitation for permission is exactly stated. It is the physician's task to stay rigidly within the bounds which have been set for him.

The third element which is distressing to the mortician is the amount of time which is consumed between the death of the patient and the time when the mortician receives the body and is able to start his work. Often deaths occur in the late afternoon and early evening hours and it is not unusual for pathologists to hold these bodies over night and let the embalmer wait twelve and even twenty-four hours. This allows for a more intense clotting of the blood in the vascular channels and in addition allows considerable postmortem change to occur. This, of course, makes it much more difficult for the mortician to present a lifelike body for the approval of the bereaved relatives. Here again the correction is obvious and should be easy. Immediately upon the death of a patient our morticians are notified, and are allowed the choice of letting us proceed with the necropsy immediately or if it is impossible to perform our work immediately, the mortician is given the opportunity to proceed with his arterial embalming. Again, immediately on completion of our examination, the mortician is notified. This lessens in two ways the element of time which elapses between the death of the patient and the time when the mortician may start his work; first, the mortician has his choice of which method is to be followed; and second, he will know within a very short range of time exactly when he may have the body.

The final objection of the mortician is that physicians who have performed necropsies often withhold data which may be pertinent to the em-

balmer. It may be said that successful embalming can be done on about 80 per cent of individuals. In the 20 per cent of individuals in whom embalming is either unsuccessful or at least unsatisfactory, the pathologist often may note anatomic lesions which hinder the embalming and he may preserve certain vessels with which reinjection can be attempted. Often, too, if a pathologist notices that one particular type of fluid or one particular method of injection fails to produce the desired results he may so inform the mortician and thus aid in the better preservation of the body.

In summary the desirability of performing necropsies has been stressed. The three most important factors in our failure to obtain permission for necropsy have been noted and emphasis has been placed upon a lack of cooperation with the funeral director. The objections of the mortician to necropsy have been listed and methods for correcting these criticisms have been suggested. Essentially our method of correcting these criticisms lies in one point, close cooperation with our morticians.

XI. THE TREATMENT OF CONGESTIVE HEART FAILURE*

The majority of persons who seek medical aid because of organic heart trouble suffer from some degree of congestive heart failure. Recent advances in cardiology have made it possible to cure a definite percentage of such sufferers, to prolong the life and vastly increase the usefulness of the majority of them, and to relieve the suffering and increase the comfort of all. Therefore, it is very important for every practitioner of medicine to understand the pathogenesis of congestive failure, and to be familiar with its modern effective treatment.

When the musculature of the ventricles is no longer strong enough to maintain an adequate circulation, heart failure begins. The myocardial weakness may be due to work-exhaustion from hypertension, valvular defects, hyperthyroidism, or tachycardia. It may also be due to muscle injury from bacterial products or other poisons. Likewise heart muscle may fail from insufficient nourishment. Food stuffs, such as oxygen or vitamins, may be lacking in the blood stream, or insufficient blood may reach the heart muscle, as in coronary obstruction. Whatever the cause of the muscular failure, the changes which ensue are similar. In order to understand them it must be borne in mind that the heart is a double organ

and may fail on either side, or both sides. Usually the left heart is the first to become incompetent, but since the signs of right failure are more conspicuous, they will be described first. When the right ventricle can no longer cope with its load, it dilates. The dilatation leads to tricuspid insufficiency, enlargement of the auricle, engorgement of all systemic veins, and elevation of the venous pressure. The increased venous tension upsets the fluid equilibrium between the blood and the tissues, and edema results. This brings about an enlargement of all the organs of the greater circulation and a decrease of their functions. When the left heart fails, the process is similar. The ventricle dilates, the auricle and the pulmonary veins engorge, the venous pressure rises, and edema into the air sacs and lung parenchyma follow. The congestion engorges the lungs and is responsible for the decrease of pulmonary function which manifests itself in coughing, and the various types of pathologic breathing. Sooner or later both sides of the heart become incompetent. Then the signs and symptoms of both right and left-sided failures are combined.

PROPHYLAXIS

Because of the tremendous importance of the prevention of heart failure, some of the statements made in previous chapters will be reiterated. The hypertensive patient or the cardiac cripple from any cause should never be permitted to become fat. If hypertensive patients will take afternoon naps, long hours of sleep, frequent short vacations, and at all times avoid mental and physical strain, the majority of them may reach three score and ten years. Heart failure from hyperthyroidism, syphilis, diphtheria, or functional tachycardia can be prevented. By the proper treatment of rheumatic infection and an intelligent guidance of the rheumatic cripple, the break which occurs from this cause may be postponed for decades. However, premature congestive failure from hypertension, valvular lesions, and coronary atherosclerosis will continue to require the skilled physician's attention.

MANAGEMENT OF THE FAILURE

Perhaps it would be logical to begin the discussion of the treatment of congestive heart failure by detailing the measures which must be employed in the management of a first severe break from rheumatic mitral disease, because such individuals usually recover from their first attack and live for many years in comparative health before the disease causes death. During the interim many smaller breaks may take place, and the patient will exhibit, at some time or another,

*Editor's Note.—This is the eleventh article in this series of editorials prepared by Dr. Daniel J. Glomset on modern cardiac therapy. Earlier issues of the JOURNAL carried the previous ten parts.

all the special features which are part of the picture of congestive heart failure from any cause. Let it be assumed, therefore, that the patient is a woman thirty years of age, with mitral stenosis and auricular fibrillation, who has been "carrying on" in spite of an increasing amount of edema and dyspnea. Thoroughly frightened at last by her cough and her inability to breathe, she summons a doctor who finds her waterlogged, cyanotic, and gasping for breath. The clinician's objectives are: first, the reduction of the rate of metabolism to a level below the strength of the exhausted heart; second, the strengthening of the myocardium; and, third, the restoration of normal function to all the tissues of the body. In accomplishing these objectives the following points will be found useful:

1. A dose of morphia (15 mgm., $\frac{1}{4}$ gr. morphine sulphate), administered hypodermically should be given to the patient immediately. If more morphia is subsequently needed, it must be cautiously administered in decreasing doses. As a rule milder sedatives will usually control the situation after the first two days. The narcotic soothes the irritated cough reflex, substitutes euphoria for the mental anxiety, and slows down the general metabolism.

2. The patient must be given maximum rest. She should be hospitalized or given equivalent care at her home. The patient is put to bed in a warm room with her head elevated in such a way as to give her maximum breathing comfort. The cardiac position is an elevation of approximately 45 degrees. The patient's comfort is further enhanced by pillows placed under the knees. Only passive motion is permitted during the first few days. If the patient objects too strenuously to the use of a bedpan, a commode by the bedside may be substituted after the edema has disappeared.

3. Oxygen should be administered either by the tent method, with the patient kept in an atmosphere of from 40 to 60 per cent of the gas, or by the use of a nasal catheter with the gas bubbling briskly (thirty to sixty bubbles per minute). The oxygen is discontinued when the patient's respirations are normal.

4. If the individual is plethoric and has distended neck veins, from 200 to 400 cubic centimeters of blood may be removed through a large needle inserted into a suitable vein.

5. Digitalis or digitalis-acting drugs should be administered in all cases of congestive heart failure, regardless of the pulse rate. The drugs with digitalis-like action are beneficial in two ways; first, because they strengthen the weakened

cardiac muscle; and second, they act as cardiac sedatives by depressing the conducting tissue. In a very severe case of congestive heart failure, strophanthus is the drug of choice. It must be given intravenously. This is the only indication for the use of this drug according to our present American notion, but in Europe strophanthus preparations are used for all types of congestive heart failure, and happy results are reported.

The dose of the amorphous strophanthin, available in ampules, is 0.50 milligram. If the heart needs more stimulation, the dose may be repeated, but one should never give more than two ampules in twenty-four hours. The contents of an ampule is drawn into a ten cubic centimeter syringe which is then filled with sterile physiologic salt solution. If the crystalline strophanthus, ouabain, is used, the dose should be half of the amorphous variety. When strophanthus is not available, some purified form of digitalis, such as digifolin, may be administered. Here the initial dose should be five ampules which ought to be diluted with physiologic salt solution. This dose may also be repeated after three hours if the heart has not improved from the first one.

6. The nurse in charge should be instructed to keep a pulse deficit chart. She should keep her patient comfortable by administering small sips of water, if necessary, and small doses of morphia if the patient grows restless during the night.

The second morning the patient is usually much better. It is then time to prescribe a cardiac diet as indicated in the chapter on diet, and to order the patient's fluid intake limited to approximately 1,000 cubic centimeters. If strophanthus was administered during the previous day, the digitalis itself should now be substituted for further digitalization, and one may proceed as if no digitalis had been given, since the strophanthus is eliminated in twenty-four hours.

Equivalent units of digitalis are: one ampule of digifolin; 90 milligrams ($1\frac{1}{2}$ grains) of the standardized digitalis leaves, in capsules or tablets; and one cubic centimeter (15 minims) of the standardized tincture. The average therapeutic dose for an individual weighing about 150 pounds is twenty of these units. The dose is increased for the heavier patient and decreased for lighter individuals. A safe and efficient method of administering the whole dose is to give half of the expected therapeutic dose the first day, half of the remaining the next day, and one unit two or three times daily until evidence of the physiologic effect or digitalis toxicity is observed. If the stomach is not upset, the drug may be given by mouth. If marked nausea is present, it may be given rectally in fifty cubic centimeters of

physiologic salt solution, or intramuscularly in the form of digifolin. The physiologic effects of digitalis are the slowing of the pulse, and the appearance of diuresis. When the pulse is regular and slow in the beginning, digitalis must be cautiously continued until evidence of toxicity in the form of slight nausea, coupled beats, or disturbed vision is noted.

After the full dose of digitalis has been given, the drug is withheld for a day or two. Then a maintenance dose of the drug is continued for the remainder of the patient's life. The average maintenance dose is one unit per day. Some patients require more, others less. The patient's bowels are best kept open, in the beginning, by small doses of one of the saline laxatives (one teaspoonful). The patient should remain in bed for at least two weeks after the edema has disappeared, and the period of convalescence must be continued for at least another month. Before it is over, the attending clinician should give definite instructions to his patient concerning her future conduct.

THE SAN FRANCISCO SESSION

June 13 marks the opening of the annual meeting of the American Medical Association in San Francisco. Anyone who has experienced the inspiration which comes from such a meeting will make every effort to attend this year. The scientific program is replete with papers of great value to all physicians. The scientific exhibits are almost a complete meeting in themselves. The individual physician could spend most of his time inspecting them, and come away feeling that the visit had been most worthwhile. The very size and expanse of the exhibits are breathtaking to one who has been familiar with the smaller exhibits of state meetings. In addition the commercial exhibits can furnish much that is helpful to those who will take advantage of this opportunity to see the latest instruments, equipment, books, and drugs which are on display.

Most important of all, perhaps, is the mingling with one's colleagues. The informal gatherings and conferences bring forth many helpful ideas both as to medical practice and medical economics.

Last, but not least, should be mentioned the beauties of San Francisco and the west coast country. A good vacation is the privilege of every physician; those who take advantage of the opportunity to combine a vacation and medical advancement will not regret it. Keep San Francisco and the American Medical Association meeting in mind. Plan to attend the sessions if you possibly can. Remember the dates—June 13 to 17.

NEW MEDICAL DIRECTOR OF IERA

Dr. Channing G. Smith of Granger has recently been appointed medical director of the Iowa Emergency Relief Administration. Dr. Smith will take over the duties heretofore administered by Dr. T. C. Denny, who is forced to retire because of illness. Those who are familiar with the medical plan of the Iowa Emergency Relief Administration know that Dr. Denny was appointed in 1935 to look after the interests of the medical profession, and to work out plans for medical relief which would be acceptable to the physicians and give the best care to the indigents.

Dr. Smith is too well known to need any introduction to Iowa physicians. His honesty, his ability, his sense of fair play, and his courage have been demonstrated many times in the past. It is a difficult job which he is undertaking, but the medical profession is fortunate in being able to procure his help. We may rest assured that Dr. Smith will do all in his power to provide adequate compensation for medical care. We may also know that he will frown upon injustices either on the part of the medical profession or other agencies.

The JOURNAL bespeaks the cooperation of all physicians in Iowa in helping Dr. Smith make a success of the work he has undertaken for his colleagues, and it wishes him the best of luck in the task which is ahead of him.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Medical Economics Committee

The Medical Economics Committee met in the central office at one o'clock on Thursday, March 10. Present were T. F. Thornton, E. E. Shaw, and A. C. Moerke.

The committee discussed the Summer Round-Up examinations in detail, and drew up a recommendation regarding their conduct which is to be presented to the House of Delegates at the annual meeting in May. It then considered the problem of the 4-H Club examinations, and formulated recommendations in regard to them, this also to be presented to the House of Delegates for action at the annual meeting.

The Marathon Finance Company wrote that it felt the Iowa State Medical Society should pay the premium on the bond which it is carrying at the request of the officers of the State Society. After careful consideration, it was decided that in view of the satisfactory performance of this company during the last year, it would not be necessary for it to furnish a bond during the coming year.

Dr. Shaw reported on the Farm Security Administration and its activities in Iowa. A report was also given on the Iowa Hospital Service Insurance Company.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. S. E. LINCOLN, 2220 East Thirty-second Street, Des Moines

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

THE ETHICS OF ADOPTION*

(Continued from last month)

While the child's background is important and should be known to foster parents, the child himself is more important. Knowing the child's possible inherited traits and tendencies the foster parents can more intelligently plan for the child's future. His own mental level is of paramount importance and fortunately may be widely different from his relatives and parents. It is obvious, then, that only those charged by law with the responsibility of securing this information should be consulted when we are seeking a child for adoption.

To correct the many abuses to children and foster parents because of lack of facilities to secure adequate information, Iowa's present law establishing child placing agencies was passed in 1924, and the adoption law in 1927. The intent and purpose of these laws are good and if properly interpreted and administered might be an excellent protection to both children and foster parents. Unfortunately there are as many interpretations of the law as there are lawyers and judges in the state. When the present adoption law went into effect, adoption decrees were required to be filed in a central state office. From an inspection of these decrees it soon became evident that all the loop holes to avoid complying with the evident intent and purpose of these laws had been found. A casual study of the adoption decrees since 1928 would show a number of startling facts and an analytic study should be made to understand fully the need to amend our adoption laws in order to prevent the present bad practices. Some shocking practices in the administration of these laws are now current which indicate some changes are needed in our present laws to provide adequate protection to the contracting parties.

Chapter 473, Code of Iowa, Section 10501-a2 provides for investigation of adoptive cases as follows: "Upon the filing of a petition for the adoption of a minor child, the court shall proceed to verify the allegations of the petition; to investigate the conditions and antecedents of the child for the purpose of ascertaining whether he is a proper subject for adoption; and to make appropriate inquiry to determine whether the proposed foster home is a suitable

stated requirements, children are given in adoption without "verifying the allegations of the petition"; namely, "to investigate the conditions and antecedents of the child for the purpose of ascertaining whether he is a proper subject for adoption; and to make appropriate inquiry to determine whether the proposed foster home is a suitable one for the child." There is seldom a record of any investigation having been made or indication that any facts were submitted to the court for a basis of requesting an adoption decree.

In order to comply with these requirements for investigation, more definite information is necessary than merely having a casual acquaintance with the mother or a member of her family. The social, physical and mental status of the child's family must be "verified." Considerable time and experience is necessary to "verify" all these facts in order to "ascertain whether the child is a suitable subject for adoption."

When a "full and complete record" is made of the child and its antecedents the next step required is "to make appropriate inquiry to determine whether the proposed foster home is a suitable one for the child." Here again many facts concerning the proposed foster home must be verified before it can be recommended as a suitable home for the child. We must give the child a home in which he may have opportunity for normal development, morally, physically, spiritually and mentally. To secure these for him we must look for family security. We would want such parents to have a reputation for morality and upright living; to have good health; to give substantial evidence of a happy, well-adjusted family life; to show integrity and honesty in financial dealings and the ability to meet financial emergencies; to show appreciation of spiritual values and the ability and willingness to train the child in these; to be able to plan for the child's education according to his abilities; and last but by no means least, to give him the understanding a growing child needs, together with infinite patience and love.

(To be continued next month)

Woodbury County

Newly elected officers of the Sioux Med-Dames are: Mrs. C. A. Kathernan, president; Mrs. R. H. McBride, vice president; Mrs. P. L. Bettler, secretary; and Mrs. H. H. Hagedorn, treasurer.

* This article has been especially prepared for the Woman's Auxiliary by Mae Habenicht, M.D., of Des Moines, and is being printed serially in the Journal. Part One appeared last month.

SOCIETY PROCEEDINGS

Buchanan County

The first quarterly meeting of the Buchanan County Medical Society was held at the Independence State Hospital, Thursday, March 31. Dr. R. A. Stewart and his staff had charge of the meeting. A fine dinner was served at 6:30 in the chapel, which was appropriately decorated with spring flowers. Frederick L. Smith, M.D., of The Mayo Clinic, Rochester, Minnesota, addressed the group on Pitfalls in the Treatment of Varicose Veins by the Injection Method. After the formal paper, clinical material was shown with patients of the State Hospital with various degrees of varicosities. The conditions were discussed thoroughly by Dr. Smith, and an informal discussion by those present closed a very profitable and enjoyable evening.

Nelson L. Hersey, M.D., Secretary

Cherokee County

C. E. Broderick, M.D., of Cherokee, presented the scientific program for the Cherokee County Medical Society at a meeting held in Cherokee, Monday, April 11. Dr. Broderick read a paper on Interstitial Keratitis of the Cornea.

Crawford County

Tuesday, April 12, the Crawford County Medical Society held its regular monthly meeting in the small dining room of the Hotel Denison in Denison. An excellent steak dinner was served, and following this a short business meeting was conducted. An unusually large attendance from adjoining counties was present. The first guest speaker was Robert D. Schrock, professor of orthopedic surgery, University of Nebraska, College of Medicine, Omaha. He delivered an excellent illustrated lecture on Fractures of the Lower Third of the Forearm and Wrist, pointing out many of the frequent accidents to such fractures. His methods were extremely practical. The second guest speaker was James W. Graham, M.D., of Sioux City, who read a paper on Fractures About the Elbow. He presented many difficult cases.

J. James Duffy, M.D., Secretary

Des Moines County

Members of the Des Moines County Medical Society met in regular session Tuesday, April 12, and heard an address by Thomas H. Sternberg, M.D., of Peoria, Illinois, on The Treatment of Acne Rosacea and Acne Vulgaris Without X-ray.

Fayette County

The Fayette County Medical Society held its April meeting in conjunction with the medical societies of

Clayton, Allamakee and Winneshiek counties in Postville, on Tuesday, April 5. This meeting is reported elsewhere in the JOURNAL. The next session will be at the Oelwein Country Club, Wednesday, June 8.

H. H. Wolf, M.D., Secretary

Grundy County Annual Meeting

The annual meeting of the Grundy County Medical Society was held Tuesday, April 19, at the Court House in Grundy Center, with the following results: Dr. W. O. McDowell of Grundy Center, president; Dr. H. V. Kahler of Reinbeck, secretary and treasurer; Dr. Henry L. Mol of Grundy Center, delegate; and Dr. Kahler, alternate delegate.

Johnson County

The regular monthly meeting of the Johnson County Medical Society was held at the Hotel Jefferson, Wednesday, April 6, and the following lectures were given: The Medical Care of the Indigent in Johnson County, Paul Reed, M.D., of Iowa City; and Health Activities in Johnson County, Edward W. Paulus, M.D., also of Iowa City.

W. M. Fowler, M.D., Secretary

Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, May 26, with James H. Means, M.D., Jackson professor of clinical medicine, Harvard Medical School, and chief of the medical services of the Massachusetts General Hospital, as guest speaker. Dr. Means will address the group on Medical Aspects of Preoperative and Postoperative Care.

Lyon County

Dr. and Mrs. W. Vander Wilt entertained members of the Lyon County Medical Society at their home in Rock Rapids, Thursday, March 31. Mrs. Vander Wilt, who is vice commander for the third district, presented the program of the Women's Field Army for the prevention and control of cancer. Dr. F. P. Winkler of Sibley, councilor for the third district, was a guest of the occasion, and presided at a round table discussion concerning this program and campaign.

L. L. Corcoran, M.D., Secretary

Marion County

The following scientific program was presented for members of the Marion County Medical Society at their meeting held in Knoxville, Thursday, April 14: Report of the Meeting of the Fracture Com-

mittee of the Iowa State Medical Society, C. I. Fox, M.D., of Pella; Mental Hygiene, H. B. Henry, M.D., of Des Moines; Differential Diagnosis in Urologic Diseases, F. L. Nelson, M.D., of Ottumwa; and The Ocular Fundus in General Medical Conditions, G. C. Struble, M.D., also of Ottumwa.

J. R. Wright, M.D., Secretary

Polk County

The regular meeting of the Des Moines Academy of Medicine and Polk County Medical Society was held Tuesday, April 26, Broadlawns Tuberculosis Department. Harold J. McCoy, M.D., presented a paper on Hereditary Ocular Defects with Blindness, and Harry C. Willett, M.D., read a paper on Instability of the Neurovascular System as an Etiologic Factor in Dermatoses.

Poweshiek County

Thomas E. Brobyn, M.D., of Grinnell, furnished the scientific program for the Poweshiek County Medical Society at the regular meeting of that organization in Grinnell, Tuesday, April 12. Dr. Brobyn spoke on Management of the First and Second Stages of Labor.

C. E. Harris, M.D., Secretary

Scott County

The Scott County Medical Society met in regular session, Tuesday, April 5, at the Lend-A-Hand Club in Davenport. The speaker of the evening was Gordonwy O. Broun, M.D., professor of internal medicine and director of the department of the University Hospital, St. Louis University School of Medicine. Dr. Broun's subject was The Problem of Arteriosclerosis.

H. A. Meyers, M.D., Secretary

Tama County

Milo G. Meyer, M.D., of Marshalltown, was guest speaker for the Tama County Medical Society, at a meeting held in Dysart, Thursday, April 21. Dr. Meyer presented a paper on Psychoneurosis.

Wayne County

The Wayne County Medical Society met Tuesday, April 12, at the hospital in Corydon, for the following program: Pneumonia, J. H. McCall, M.D., of Allerton; The Treatment of Injuries to the Hands, C. F. Brubaker, M.D., of Corydon; Relief Measures, S. W. Corbin, M.D., of Corydon; and Quarantine, J. F. Condon, M.D., director of the Chariton River Basin Project.

Woodbury County

A symposium on collapse therapy was presented at the meeting of the Woodbury County Medical Society, held Wednesday, April 20, at the West Hotel in Sioux City. C. K. McCarthy, M.D., clinical director of the Cooperative Tuberculosis Control

Service of the Iowa Department of Health, spoke on the Medical Aspects of Collapse Therapy; and A. Ames, M.D., of the Department of Surgery of the University of Iowa, College of Medicine, covered the Surgical Aspects of Collapse Therapy.

W. H. Gibbon, M.D., Secretary

Wright County

Julian D. Boyd, M.D., associate professor of pediatrics, State University of Iowa, College of Medicine, addressed the Wright County Medical Society at its meeting held in Clarion, Wednesday, April 6. Dr. Boyd's subject was Infant Feeding.

Four County Medical Society

The Four County Medical Society, composed of physicians in Allamakee, Clayton, Fayette and Winnebago counties, met Tuesday, April 5, at Postville. Two physicians from The Mayo Clinic in Rochester, Minnesota, delivered the scientific addresses. Arthur B. Hunt, M.D., gave an excellent paper on Sterility, and John M. Waugh, M.D., clearly outlined the indications and results of Surgery of the Female Pelvis.

J. J. Daly, M.D., Secretary

Iowa and Illinois Central District Medical Society

The annual meeting of the Iowa and Illinois Central District Medical Society will be held Wednesday, May 25, at the Outing Club in Davenport. The scientific program will be opened at three o'clock with an address on Sulfanilamide Therapy by Alex E. Brown, M.D., of Rochester, Minnesota; at four o'clock, D. B. Phemister, M.D., professor of surgery at the Albert Billings Memorial Hospital and the University of Chicago, will deliver an address on The Use of the Bone Graft in the Treatment of Bone Tumors; and at five o'clock, James H. Means, M.D., professor of medicine at Harvard Medical School, Boston, Massachusetts, will speak on The Commoner Deficiency Syndromes found in a Medical Clinic.

Dinner will be served at six o'clock, after which two members who have completed fifty years in the practice of medicine will be honored. They are Dr. George B. Maxwell of Davenport, and Dr. G. A. Wiggans, of Milan, Illinois. Scheduled as the evening speaker is Anton Knutson, M.D., of Reynolds, Illinois, who will deliver a lecture accompanied by motion pictures on Hunting Big Game in Africa. Dr. Knutson spent six months on his hunting expedition in Africa in 1937.

James Dunn, M.D., Secretary

Iowa Clinical Surgical Society

Officers elected at the annual meeting of the Iowa Clinical Surgical Society held in Burlington, Saturday, April 16, are: Dr. E. A. Jenkinson of Sioux City, president; Dr. C. A. Hill of Council Bluffs, vice president; and Dr. Donald C. Conzett of Dubuque, secretary and treasurer.

PERSONAL MENTION

Dr. C. L. Worley, formerly of Riverside, has moved to Ottumwa, where he will continue in the practice of medicine. He has secured Dr. T. V. Nieman to take over his practice. Dr. Nieman comes to Riverside from Redgranite, Wisconsin, where he has been practicing for the past two years.

Dr. T. A. Moran of Melrose, spoke before the regular April meeting of the Centerville Women's Club, Tuesday, April 12, on "Cancer."

Dr. M. A. Kadel, after practicing two years in Wellman, has announced his removal from that vicinity for Tipton, where he will take over the practice of Dr. H. E. O'Neal.

Dr. Floyd O. Rolfs, who practiced for a short time in Brooklyn, has located in Parkersburg. He is the son of Dr. F. A. Rolfs of Aplington.

Dr. C. B. Meffert of Cedar Rapids, presented an address on "Cancer Control" at an open meeting sponsored by the Tipton Women's Club at the Tipton Library Auditorium, Tuesday, April 5.

Dr. James W. Lannon, who has been associated with Dr. E. F. Beeh in Fort Dodge for the past eight months, has located in Clear Lake. Dr. Lannon is a graduate of the Creighton University School of Medicine.

Dr. William F. Mengert, of the State University of Iowa, College of Medicine, department of obstetrics and gynecology, was the speaker of the evening when the Grinnell League of Women Voters and the Grinnell Maternal Health League met in joint session, Monday, March 28, at the Women's Quadrangle in Grinnell. Dr. Mengert spoke on "Medical and Economic Reasons for Birth Control."

Dr. B. F. Howar, for the past two years on the staff of the College of Medicine, State University of Iowa, has announced his association with Dr. E. W. Slater in Jewell.

Dr. George M. Crabb of Mason City, spoke on "New Things in Medicine and Surgery," at a meeting of the Collegiate Club in Mason City, Monday, April 18.

Dr. B. D. Roberts, after two years' practice in Wayland, has accepted a position with Knox College in Galesburg, Illinois, as professor of hygiene and director of student health, according to an announcement made by the president of that institution. Dr. Roberts will begin his new duties in the fall.

Three physicians furnished the following program for the April meeting of the Parent-Teacher

Association of Marion, Iowa, Thursday, April 14: "Social Diseases," Dr. E. G. Kieck of Cedar Rapids; "The Summer Round-up," Dr. Philip Crew of Marion; and "Cancer, and Modern Methods Used in the Control of the Disease," Dr. H. E. Pfeiffer of Cedar Rapids.

DEATH NOTICES

Brush, Milo Orion, of Shenandoah, aged fifty-three, died April 23 of pneumonia. He was graduated in 1908 from the State University of Iowa, College of Homeopathic Medicine, and at the time of his death was a member of the Page County Medical Society.

Decker, Herbert Morgan, of Davenport, aged sixty, died April 21 at the U. S. Veterans Hospital in St. Paul, Minnesota. He was graduated in 1906 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Scott County Medical Society.

Schifferle, Edward, of Creston, aged eighty, died April 16 after an illness of several months. He was graduated in 1884 from Rush Medical College, University of Chicago, and at the time of his death was a life member of the Union and Iowa State Medical Societies.

Sheafe, Edward Augustus, of Ottumwa, aged seventy-six, died April 18 after a heart attack. He was graduated in 1894 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Wapello County Medical Society.

SPEAKERS BUREAU RADIO SCHEDULE

WOI and WSUI—Wednesdays at 4:00 p. m.

May 11	Blood Transfusions,	Elmer L. DeGowin, M.D.
May 18	Sex Education,	L. R. Woodward, M.D.
May 25	Peptic Ulcer,	H. I. Down, M.D.
June 4	Heart,	Daniel J. Glomset, M.D.
June 8	Vacations,	W. R. Brock, M.D.

PREVALENCE OF DISEASE

	Mar. '38	Feb. '38	Mar. '37	Most Cases Reported From
Diphtheria	17	22	15	Black Hawk, Kossuth
Scarlet Fever	1144	998	1585	Polk, Wapello, Black Hawk
Typhoid Fever ...	4	5	3	(For State)
Smallpox	171	171	150	Jasper, Wapello
Measles	678	264	12	Black Hawk, Muscatine, Scott
Whooping Cough .	115	117	211	Johnson
Cerebrospinal Meningitis	6	7	4	(For State)
Chickenpox	455	352	285	Woodbury, Dubuque, Des Moines
Mumps	126	56	154	Dubuque, Woodbury, Poweshiek
Influenza	43	49	45	Fremont, Cedar
Poliomyelitis	2	0	4	Floyd, Jefferson
Tuberculosis	57	54	53	(For State)
Undulant Fever ..	14	10	12	(For State)
Gonorrhea	191	252	197	(For State)
Syphilis	404	280	262	(For State)

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE CEREBROSPINAL FLUID—By Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$5.00.

ESSENTIALS OF PRESCRIPTION WRITING—By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$1.50.

EYESTRAIN AND CONVERGENCE—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s. 6d. net.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE—Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$3.50.

THE PHYSICIAN'S BUSINESS—By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$5.00.

PRACTICAL PROCTOLOGY—By Louis A. Buie, M.D., professor of proctology, The Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.

SURGICAL DISEASES OF THE MOUTH AND JAW—By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

OPERATIVE GYNECOLOGY—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine, and Robert James Crossen, M.D., assistant professor. Fifth edition. Revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.

SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1937.

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY—Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

THE 1937 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT—Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

THE 1937 YEAR BOOK OF GENERAL MEDICINE—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF GENERAL SURGERY—Edited by Everts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1937. Price, \$3.00.

THE 1937 YEAR BOOK OF PEDIATRICS—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

BOOK REVIEWS

ARTHRITIS AND RHEUMATIC DISEASE

By Maurice F. Lautman, M.D., consultant to the U. S. Public Health Service Clinic. McGraw-Hill Book Company, 330 West 42nd Street, New York, 1936. Price, \$2.00.

This book has been prepared as a manual of instruction to patients suffering from the various types of rheumatic disorders. It makes no pretense at completeness; in fact, the author has thoughtfully avoided certain phases of this important subject which are now subject to considerable controversy.

To maintain a proper scientific attitude and at the same time evade technicalities that are too great, confusing terminology is avoided wherever possible and the language of the layman substituted. The volume covers the classification, the pathology and the various forms of treatment, such as diet, massage, exercise, the application of heat, hydrotherapy, etc.

R. R. S.

SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK

By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and Montreal, 1937.

After carefully reading this volume your reviewer does not hesitate to recommend it to any doctor of medicine. It is a valuable treatise, written especially for the general practitioner and surgeon in the author's typical style.

The book is divided into ten chapters which de-

scribe the various tumors of the neck. Special attention is given to Hodgkins' disease. Definite diagnostic aids from the standpoint of anatomy are valuable to the surgeon. Diagnostic aids for each of the conditions described are abundant. Suggestions for clinical and laboratory diagnosis are many. Last, but not least, are the numerous plates and pictures of the conditions described, which make it impossible for the reader to misunderstand the various types of tumors described. Prognosis of the different varieties of tumors described is a part of the author's discussion.

His frankness as to the incurability of metastatic and certain of the primary malignancies, Hodgkins' disease, etc., is a source of comfort. We wish again to emphasize that the volume is a valuable one and we highly recommend it.

L. D. P.

PRACTICAL PROCTOLOGY

By Louis A. Buie, M.D., F.A.C.S., head of section on proctology, The Mayo Clinic. W. B. Saunders Company, Philadelphia, 1937. Price, \$6.50.

The most that one can say about this admirable book is that it covers the field completely, omitting no phase of the subject in any detail. Recent advances in proctology are not spectacular. Pruritus ani is still treated with as many medicines as are burns. One of the best passages of the book concerns the control of pain postoperatively by the continuous use of hot wet packs. It has more benefit than all the sedation one can inject into the patient. The description of the technic of application is clearly presented.

C. H. J.

AN INTRODUCTION TO MEDICAL SCIENCE

By William Boyd, M.D., professor of pathology in the University of Manitoba. Octavo of 307 pages, illustrated with 108 engravings. Lea and Febiger, Philadelphia, 1937. Price, \$3.50.

This volume is an introduction to medical science written for the premedical student, the nurse, the laboratory technician or the layman who is interested in medicine. It is an excellent book and if made available to interested laymen, to provide them with a clear and accurate picture of the human organism and its diseases, it would result in a correct appraisal of the various cults in their approach to the broad field of human disease.

The first section of the book deals with the general principles of disease, the second part presents diseases of the various organs, and the last section considers briefly the elements of the prevention of disease.

D. K.

THE 1937 YEAR BOOK OF PEDIATRICS

Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1938. Price, \$2.50.

The reviewer looks forward each year to the arrival of this valuable volume, not only because it contains a review of the pertinent pediatric literature for the year, but also for the remarks of appraisal by the author. Typical of the editorial comment is a footnote under a review of a paper on vaccination against colds, "If colds are due to virus infections, how can we expect vaccines of bacterial origin to effect immunity or cure?" Of particular merit in the year book of 1937 is a discussion of vitamins and their rôle in human nutrition. A large amount of space is devoted to the subject of sulfanilamide and its proper use. Every field of pediatrics is reviewed, from infant feeding to diseases of the skin. The study of this small book will acquaint the reader with progress in the field of pediatrics during the past year.

D. K.

THE CEREBROSPINAL FLUID

By H. Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; director of the Cerebrospinal Fluid Laboratory, Boston City Hospital; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School; formerly director of the Cerebrospinal Fluid Laboratory, Boston City Hospital.

According to the authors, "it is the purpose of this book to present facts." The material used as a basis for this book consists of approximately 21,000 specimens of cerebrospinal fluid from the Boston City and Massachusetts General Hospitals.

The volume itself is divided into eight chapters which include a brief historical review, and a review

of the essential anatomic and physiologic, as well as the chemical and pathologic facts. There are chapters on the technic of puncture, the therapeutic use of lumbar puncture, roentgenography of the ventriculosubarachnoid space, and a chapter on laboratory methods. One of the most interesting and instructive chapters deals with the findings in the cerebrospinal fluid in about one hundred different disease syndromes. In many of these, particularly where the volume of material possessed by the authors was small, additional information has been gleaned from the literature.

The authors have carefully reviewed the subject of the cerebrospinal fluid and have intelligently summarized our present-day knowledge of this subject. This seems to be an exceptionally valuable and timely book for any one who is interested in the cerebrospinal fluid.

D. H. K.

SURGICAL DISEASES OF THE MOUTH AND JAWS

By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

This work of forty-two chapters and 334 illustrations consists of a rather complete presentation of the pathologic conditions of the oral cavity and its adjacent structures, discussing the etiology, pathology, clinical features and treatment. Such a work should be of particular value to the dental oral surgeon and those physicians limiting their practice to diseases of the ear, nose and throat.

Particularly outstanding chapters are those which treat of fractures of the jaws and face; diseases of the temporomandibular joint; diseases of the salivary glands, benign tumors and malignant neoplasms occurring in this region. The chapter discussing the principles and application of irradiation in the treatment of malignant neoplasms condenses the refinements of the differential diagnosis as it applies to the radiosensitivity of various neoplasms, so that it is of practical value to the clinician. This chapter alone reveals that one of the greatest advances made during the past five years has been the differential selection of neoplasms for irradiation therapy.

C. C. J.

CORRECTION

The March issue of the JOURNAL carried a review of Dr. Max Huhner's new book, "The Diagnosis and Treatment of Sexual Disorders in the Male and Female." The author and publishers have called our attention to the fact that this volume is the first edition of the work instead of the fourth, as previously stated, and we are very glad to make this correction. The volume contains new material which has not been included in any of the author's earlier publications.

The JOURNAL

of the

Iowa State Medical Society

Vol. XXVIII

DES MOINES, IOWA, JUNE, 1938

No. 6

PRESIDENT'S ADDRESS*

EDWARD M. MYERS, M.D., Boone

It is always a great honor, in the life of anyone who has the ambition to do something worthy of the recognition and appreciation of his fellow-men, to have been chosen by his own confreres and peers, to assume the leadership of the Society which represents his profession or occupation in life. I know of no accomplishment of mine of sufficient importance or worth to merit the honor you have conferred on me, in electing me President of this diligent and alert Society. The span of man's activity is so short that many who are most worthy do not receive this distinction; that you should have conferred it on me affects me profoundly. In return for your confidence, I can say in all sincerity and humility, that I have given my best thought and judgment (a meager recompense) to the problems of our Society and of organized medicine, as it pertains to our growth, influence and service.

Traditionally, the prescribed annual address of the president implies a consideration of activities undertaken by the Society in the scientific, sociologic and economic fields and the results; measures directed toward the education and the protection of our members; our weaknesses, our needs, our dangers and our strength; the latter being directly commensurate with undivided co-operation. "Unity does everything when it is perfect; it satisfies desires; it simplifies needs; it foresees the wishes of imagination and becomes a constant fortune" (Senacour). Anyone who is in any measure familiar with the present day problems of disease, its cause, prevention, relief and cure; the organization of research; the protection of public health; the furtherance of preventive medicine; the education of the laity; the training and education of physicians; the relations of physicians with each other; the problem

of specialism; commercialism in medicine; hospitalization of medicine; the qualifications for the practice of medicine; the relation of the profession to the government, federal and state; and to movements in society which impinge on medicine, for good or evil, cannot help seeing how manifold are its contacts and how complex are the ramifications into our daily life. Some of these problems are soluble and when once solved, do not recur; others are insoluble because they arise from permanent conflicting tendencies in human nature and the most we can hope to accomplish is a reconciliation for a limited time only and in a limited field.

In the early days of Grecian medicine, politics was indetical with statesmanship; it did not carry the derogatory implications which our politics bears. Obviously then, we need a vision that transcends politics, even in the better sense; one which includes the whole profession and its relation to society as a whole. We need leaders of profound insight with a grasp of principles, for only by understanding principles can practice be made intelligent. Where shall we look for leadership in the new days that are to come, when we are to reach some new solution for our problems? Are we to find them in the ranks of officials in organized medicine? Are they among those distinguished in the science or the art of medicine? Or are they to come from the group of younger men whose promise is known only to those close by them? These are pertinent and pressing questions for us seriously to ponder. An unerring choice will lead the fortunate one to a position of even greater worth and dignity in the social order than any high office which he may now hold.

According to an ancient but admirable Oriental custom, a mandarin, once every year, puts aside his daily occupations, visits the tombs of his ancestors, reflects on their careers, contemplates their achievements and draws lessons from their experiences, that pride and vanity may be sup-

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

pressed and men held to the level of earthly truths (DeCosta). To meditate in such a spirit is to appreciate the inevitable succession of cause and effect; to recognize the vast and far-reaching influence of things apparently trivial; to know that man is born with privileges and responsibilities, both of which are transmitted to his descendants; and that we come and go but science lives and advances. A great foundation recently asked, "how well is medicine fulfilling its functions to society; how can the benefits of medical science be best distributed and how shall medicine best be enmeshed with its economic structure?" From the valuable outpouring of opinion there has come to light that, despite many expressions with more than a tinge of "trade unionism," much well considered thought is coming from informed and able men. Strangely enough, the phrase, "personal relation between doctor and patient," which heretofore has been employed by men who were disposed to the science rather than the art of medicine, who looked askance upon discussions of human relationship, is now urgently proclaimed a citadel of refuge and a bulwark against socialization. The recognition of this relationship, although belated, is none the less good, for it is indeed an overwhelming handicap to any plan for mechanizing medical care.

If we, as individuals and as an organization, would in design and in action, subscribe to the proposition that the chief responsibilities of the medical profession today are, to advance the basic knowledge and spirit of the profession, to safeguard our economic security and to promote public welfare and public education, we would, in response to the relevant question just propounded, have a pragmatic and workable concept of duty. One of the things which is becoming increasingly necessary in our social and intellectual life, is the breaking down of the traditional barriers between the professions and the various occupations and activities; we must realize they are not separate and distinct, but interdependent and closely associated. The same physics, chemistry and biology that serve medicine, serve the applied sciences and the general interests of men. We find we are no longer able to say where medicine ends and some of the other scientific affairs of men begin.

As we consider modern activities, we discover that the viewpoint of the public toward medicine is being changed. We are now coming to look upon the physician as one of those interdependent influences in modern society which makes it possible for it to go forward and do its work.

We have passed the point where the physician is sought only in moments of emergency, pain or disease. He has been drawn into the social, economic and political organization of mankind, which makes his tasks more difficult but more essential than ever before. Every time we raise the cultural level of a people, we increase their wants, multiply their needs and intensify their ambitions. Although it has been proposed that only those who possess adequate ability and training should be permitted to enter upon the study of medicine, and only those with the highest ethical ideals should be permitted to engage in the practice of medicine, yet one of the surest ways to solve the problem of over-supply of doctors, if such a problem exists, is to educate the people with regard to the quality of service the profession can render them.

Dr. Coffman of the University of Minnesota says, "In our antagonism regarding a form of practice, we must not overlook the fact that the 'recruiting officers of socialism' are want, restlessness and despair; we should look carefully into these matters and make our decisions based on facts and the quality of service we undertake to render. We cannot escape the fact that the masses everywhere are demanding greater opportunities and a larger share of this world's comforts. They want employment, good government, that is, government good to them, old age insurance, unemployment insurance, education for their children and the opportunity to live healthy lives; in fact 'trying to fashion a new philosophy in a world that is held in check by practices, procedures and outlooks of another day.'" They recognize that the world is advancing and are more than willing to experiment with methods of a socializing character. Wherever people, under existing conditions, cannot obtain the benefits of modern medicine, there is a serious gap in the distribution of that service. As a result, we must either sit back and acknowledge the problem as insoluble or, regardless of preconceptions, we must seek a practical solution. If this solution calls for changes in the traditional manner of distributing service, we must allow necessity and helpfulness to guide our practices rather than tradition or selfish interest. Here again, the relationship between the doctor and patient is so intimate and personal that we become "gun-shy" of systems, codes, and forms of political control. Should the politician intervene, both the patient and medical service would suffer.

Dr. Neal, Past President of the Illinois State Medical Society, in an admirable and timely ad-

dress on "Medicine in the Changing Social Order" says, "A system of educating the public as well as the profession to the importance and capabilities of the general practitioner; limiting the number of physicians; giving them superior training; strengthening our existing public health agencies and promoting the wholesome virtue of self-help, will meet more satisfactorily the needs of the American people, than will all the fantastic schemes to socialize the practice of medicine." Public instruction in medicine is one of the most important functions of our profession today. The all-pervading idea of our medical heritage is the welfare of the people. The patient is the center of our medical universe, toward whom all our endeavors tend. For years we have criticized the public for its lack of good judgment in its selection of doctors to care for the delicate machinery of their bodies. People who profess to be, and are, intelligent in other decisions of life, have employed the quack, the irregular practitioner, the bone setter, and healers of every stripe and hue. In fact, many times they show them greater confidence and give them more enthusiastic support than they do the members of our profession. Are these cults more skillful, better qualified or trained? Are they more worthy of confidence and support? Not at all.

Although our indictment against the sects and irregular cults is their inability to understand the intricate causes of disease, whether of mind or body or of its prevention and control, and worst of all, the untenable belief of each separate cult, that all diseases can be cured by a single process, we cannot ignore the fact that the popularity of these healing cults is due, not only to those individuals of unstable nervous systems who are always looking for some easy method of treatment, particularly if it is mysterious, but also because these healers give these patients a reason, an hypothesis for the results they claim to secure. In other words, they educate the people in their beliefs or sophistries and that is what the public wants and demands. Except in a small way and within recent years, what has our profession done to educate the public? What have we taught the people of the real scientific truths of medicine? What standards have we set for the laymen, to assist in the selection of a skillful physician? The patent medicine almanac, so-called "leaves of healing" left at the front door, and quack advertisements by radio and press, have been the too effective instructors of the public; which is also being constantly enlightened by enterprising reporters and magazine writers. The people should

be taught that there can no more be different schools of medicine than there can be of mathematics, physics or astronomy. Unquestionably then, there is urgent need for the profession to take a more aggressive stand in the enlightenment of the masses by sound educational publicity. Next to the scientific, the most outstanding trend of the age is toward social equality and social freedom, the hope of which lies quite as much in education as in leadership. The public distrust of the doctor, bred by ignorance and mysticism, will vanish in the light of intelligent medical education. No cult can long thrive in the atmosphere of open competition with the widespread dissemination of medical truths. The already appreciable transformation of the attitude toward physicians, from that of an expert in emergency to that of an exponent of prevention, is an important and salutary step in the education of the public mind.

"It has been a long hard struggle to establish the truth, though perhaps not as difficult as in other professions, that the public has a primary and fundamental interest in a well trained profession. We still need greater care in selectivity; guidance as to more accurate tests of aptitude; we need more thorough study of the nature and extent of pre-professional education in general cultural subjects" (Angell). Sir James Paget traced the careers of a thousand students of St. Bartholomews for fifteen years after their graduation and discovered that only twenty-three had achieved distinguished success; sixty-six had attained considerable success; 124 did poorly indeed; fifty-six failed utterly; ninety-six abandoned the profession; 149 died within the first twelve years of practice; forty-one died while they were pupils; twenty-one died from diseases due to their calling. The mathematical conclusion is that 8.5 per cent of a class will achieve success; 50 per cent will make a decent living; 18 per cent will do poorly or will fail and ten per cent will abandon practice. If the laws of average hold good, and they usually do, the same proportion today will succeed, the same proportion will fail, and the same proportion will abandon the profession.

In our anxiety for betterment of these statistics, which in reality means greater success for physicians, we devoutly wish for "some infallible method by which we might recognize the unfit in their early student days, that we might turn them back from medicine; some test that would tell us of judgment, tact, energy, observation, idealism, temperament, honesty, loyalty, mo-

rality, intelligence and culture; some occult ray that would reveal the alloy from the gold; how many in truth will become successful surgeons, internists, specialists or what is most desirable in all young physicians, general practitioners. In medical schools forty years ago, a large percentage of professors and instructors were chosen because they had attained some local or national reputation as practitioners; selections were made regardless of their special knowledge of the subjects they were to teach or their ability to impart their knowledge. We eagerly looked forward to the time when the universities would direct medical education. It came, but with what results to the student? The departmental head was a man of wide reputation as an original investigator or a laboratory expert, but as a teacher he was a failure. There is, of course, a place and a first one for the investigator, the laboratory and the research man. The fault lies in the fact that the laboratory idea dominated the clinical phase of practice; the relationship between scientific facts and disease was not properly established; the thought was overlooked that the primary mission of a medical school is not to train original investigators but to teach men to apply scientific knowledge to the patient. In the first three-fifths of the medical course the student was not brought in contact with any patients; he entered his junior and senior years overflowing with isolated scientific facts but woefully incapable of applying this knowledge to the patient. In order to meet the requirements of the curriculum he had to be a book-worm; "he had no opportunity to think; he did not know how to think; he was a book stuffed automaton, albeit an acceptable applicant" (Murphy).

Independent thought comes from men whose minds have not been warped by the books and the thoughts of others but whose interests have been aroused by individual work and personal observations and by seeing others work. It would seem that the student's first year might well be one of probation, after which his fitness to continue the course might be impartially judged. There is surely something radically wrong with our medical educational system when young men are taken into a profession for which they have no special aptitude. May it not be that the philosophy of "hitching your wagon to a star," the assurance given them that by hard work they can become anything they choose, is fallacious? Naturally they hope to realize in life that which has been promised them in college; but as their dreams fade and their hopes vanish they are left stranded, disillusioned and discouraged.

It is a hard but unescapable fact that the vast majority of the offices of life are of lowly estate and it is equally true that a like majority of our youths have no special aptitude to fill any other. Is it not time, therefore, for us to be more diligently applied to our pre-medical education? These and other suggested changes now being considered may relieve the growing anxiety that the medical profession is overcrowded. On the other hand, it was the belief of one of the brilliant past presidents of the American Medical Association "that there is not an oversupply of doctors; that there is not a sufficient number of competent and cultured men to treat all of the medical cases; nor of surgeons to do all the operations; nor of obstetricians to attend all the deliveries nor of specialists to meet all of the special demands." "What we need," he continues, "is less generalization of patients in diagnosis and treatment and a closed individualization of their particular conditions and demands." If this statement is true and it undoubtedly carries more than a modicum of reality, then the medical man is not in competition with his fellow practitioner in any sense but he is competing with the standards of medical qualifications of his time. Thus this standard becomes the dividing line between incompetency and efficiency. He who keeps above the standard, elevates the ethical, moral and cultural average and seeks friendly cooperation, that person enjoys the confidence of the public.

It is not the mastery of a mass of details, not even the sharpening of the mind alone that we expect of our graduates, but an understanding of the things that make and enter into human life, which build and move human character. If I were to advise a young man contemplating the study of medicine to whom appears, as it did to me, like a spectre, the disturbing question, "have I chosen wisely in my life's work?" I would propound among others, these pertinent questions; does medicine hold for you the eternal element, that is, an essential importance and an abiding interest; does it, in your mind, deal with human needs which are wholesome and not feeble, important and not trivial, fundamental and not fictitious; at three score years and ten, at the end of the journey and looking backward, will your chosen profession be one, which would seem to you from that point of view, worth spending a human life, your life? I grant that these are penetrating questions, solemn enough when asked in advance, most solemn of all when asked in retrospect; but if a sober minded youth can conscientiously answer them in the affirmative,

he has chosen wisely and well. At no time in the history of education have our higher institutions of learning been faced with graver problems than today. The economic, social and political uncertainties and cross currents would weaken our educational system if we would permit it. We need cultural refinement more than in any previous age. Are we going to look upon our schools as dignified institutions of learning, as essential cultural foundations where academic integrity and influence must be preserved; or will we regard them purely as decorative schools of professional training? Upon our response to these questions, to a great extent, will depend the future of our profession as a philanthropy.

Appreciating the spirit of altruism which actuates the doctor, from the most influential to the most humble, I am confident that we may look toward the future with confidence and optimism. As a result of the untiring efforts and forward looking spirit of the medical profession, more directly through the Council on Medical Education and Hospitals, the Association of Medical Colleges, the Federation of State Medical Boards, the Committee on Medical Education and Licensure, and allied organizations, minimum standards for medical practice have been established, medical colleges have been classified, and facilities for bed-side instruction have been incorporated in didactic courses to the end that the present day graduate is much better qualified than his predecessors. Furthermore, the raising of entrance requirements, the employment of full-time trained instructors in basic sciences and clinical branches, the improvement in hospital service, the correlation of the pre-clinical with the clinical studies, the selection of a carefully balanced curriculum which includes the psychobiologic and cultural subjects and not least of all, the scrutiny of the social, intellectual and moral qualifications of the pre-medical student, prepare the modern graduate, the better to fulfill his obligation to humanity. President Conant of Harvard University says, "Medical education in the United States is sorely in need of additional support but this support is needed for the purpose of improving the quality of the work, not to accommodate an increasing student body." Outstanding universities such as Harvard could render a great public service by doing their share in limiting admissions to the number of students who could reasonably expect to earn a living upon graduation.

One of the astonishing features in the art of medicine has been the growth and perfection of the specialties. It has been so alluring that it is

decimating the ranks of the general practitioner. Manifestly it is a grave error for a young physician to begin his practice as a specialist either in medicine or surgery or any of their departments. A specialist must have the broad training which only general practice can give. It increases his diagnostic acumen, his therapeutic skill, his prognostic ability, his resourcefulness in emergency, and his control and management of patients. Eighty per cent of all illnesses in individuals may be easily treated by any well trained physician; fully one-half of the remaining twenty per cent is such that the underlying cause may never be completely determined, no matter how exhaustive the study; the other ten per cent is of such a nature that we have at our disposal no adequate measure with which to cure it. There is, of course, a definite field for the specialist, but he should be a man with exceptional ability and skill which have been founded on experience and training in general practice. Both the profession and the laity must be re-educated in the importance of the field of the general practitioner. He is still the central figure in the healing art.

In our enjoyment of the harmonious and the attractive in life, we often find the most beautiful picture, on close observation, reveals a flaw; the most perfectly and directed orchestra will occasionally play a discordant note; the most gorgeous sunset may be marred by an intervening cloud; just so with medical practice. These are troublesome times, full of distress, anxieties and discord. It is not necessary for us to be disillusioned, but we should be forewarned and resolute; we must not be unmindful of the fact that medicine "has fallen on evil days" through the growing tendency toward commercialism. In our larger American cities chiefly, but not altogether, our profession has been soiled and degraded by this widespread practice. There are, of course, myriad exceptions, but too large a percentage of skilled physicians and surgeons seem to value their reputations by the disproportionate fees which they impose. With persons of moderate means, illness is coming to be dreaded, not only because of the suffering and loss it entails, but because of the devastating bills which can only be met by paralyzing economy. While this seems an ungracious scrutiny, yet the most dreadful aspect of this abuse has not been given adequate public attention. In the most critical cases, human lives hang in a perilous balance. The ability of the physician or surgeon depends not only on his technical skill but also on the insight which comes to him when he works

from a pure intuitive spirit. Commercialism robs him of this precious insight; at the critical moment his powers fail and the balance tips toward a fatal event. Thus the tragedy in the physician's own ethical life has projected itself and has become the emotional tragedy of a whole family.

The problems of medical economics should be of intense interest to every practitioner, because the care of the sick and injured among the indigents and those of the low income group in a community has always been unsatisfactory. Socialized medicine, as one of the outgrowths of the study of economics, has been casting its shadow for some time and the older we grow, the longer the shadow. To the members of the profession who regard individualism as vital to its permanency and growth, the prospect of state controlled medicine is not pleasing; in fact it is bewildering and alarming. Almost daily, the unmistakable evidence is placed before us that the world is undergoing a radical upheaval. In America, freedom of speech and action which our forefathers achieved through earnest conviction and strife, is under a cloud. "Rarely have we needed courage, daring and sturdy individualism (for that word implies disapproval of the interference of the state in the affairs of persons) more than in this day of self-seeking. Ignorant laymen, social theorists and adroit intriguers aim with zeal to destroy the most competent and progressive medical body which is still unspoiled in a ravaged universe."

In these precarious times, these words may seem over-solicitous. Nevertheless, either the profession must be maintained in its knowledge, ideals and independence or we will be swept into the whirlpool of politics, reduced to indifference and stasis and our practice ill-paid, ineffective, ambitionless and dead. We must not be lulled into a false sense of security by the untenable belief of these amateur meddlers, social dreamers and a few of our own craft who are short on professional skill but long on socialistic sophistries, that the ethics and conservation of medical service is so ingrained in us that it will always hold the same lofty standards, the same aspiration and the same high sense of responsibility, in whatever position the doctor may be placed. The days of isolation in medicine are over. Medicine must undertake a self-appraisal of its organization, to see if its own public relationships are such as to enable it to make proposals for the solution of un-met public medical service problems. The spectacle of Senator Lewis of Illinois who, in a masterpiece of circumlocution, filled

with implications and specious arguments, declaring "that whether we liked it or not, physicians were to become merely civil officers of the government," so dumfounded the House of Delegates at the Atlantic City session of the American Medical Association that not a voice was raised in protest. Not a word was uttered in extenuation for the woeful lack of political sagacity which should have offered in anticipation, a plan suited to our own needs, emanating and directed from within our own organization. This performance should arouse us to the realization that we have not yet risen to our full duty and should awaken us to some serious thinking and a more militant behavior. "The dominion of bureaucracy means stasis, for in all bureaucracies there are three implacable spirits, self perpetuation, expansion, and the incessant demand for more power. These spirits are potent and possess dictatorial power. In their mass action they become the veritable exponents of political tyranny. Leadership to command cannot be created by bureaucracy; it must push upward among free men" (Hoover).

Germane to this thought and significant of the manner in which our efforts must be utilized in order to be made effective, is the admonition of the great Edmund Burke, "When bad men combine, the good must associate, else they will fall, one by one, an unpitied sacrifice in a contemptible struggle." Leadership created from among free men, united in a worthy cause! That, my fellow practitioners, will be the deliverance of our profession. The life of our organization ultimately comes to depend on those who do the work, who put their hearts into it, to maintain that solidarity of interests which is so essential for the preservation of the ideals of our craft. We may not all travel the same road; a small group will be interested in pure research; a larger group practicing applied scientific methods, will be no less, investigators; a majority perhaps, will carry on the intrinsic purposes of medicine, the relief of suffering and the prevention of disease. Thus the doctor of the future will be better trained in science and human understanding, an intelligent skeptic, eager to dissociate scientific facts from worn-out theories, unhampered by fixed ideas and, with the heritage of the past, he will develop into a leader in the pursuit of the essential purpose of medicine. Mankind will reward those who show willingness to lose themselves in some great cause, and those who seek opportunity in order that they may fulfill it. No subversive forces can prevail over idealism of this type.

PRESIDENT ELECT'S ADDRESS*

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I shall discuss, briefly and of necessity rather superficially, what I believe to be the most important problem now confronting the organized medical profession. It is the question of what is to be done to provide adequate medical service to those in the low income group. There are those within the medical profession who deny that such a problem exists. There are those, some of them sitting in the seats of the mighty, who apparently believe that medical men should oppose all change. There are others who are willing to inquire, to study, and to try to see that changes which are inevitable are wise changes, and are in accord with those principles of the medical profession which experience has shown to be for the welfare of the public. To the most casual student of the problem, six fundamental facts become immediately apparent.

First, the problem exists. It is obvious that under certain circumstances many members of the low income group cannot receive and pay for nearly as adequate medical service as is furnished freely to indigents. For instance, a man earning \$80.00 a month, who has a fractured hip, and a child with meningitis, cannot pay his debts for years, no matter how small the payments, nor how moderate the fees.

Second, the theory that this problem can be solved by charging such large fees to rich people that the poor can be cared for free or for small fees, has broken down; rich people go to certain doctors while poor people go to others. In addition, the cost of modern medical service is now so great that it is impossible, sometimes, to render such service to people in reduced circumstances at fees they are able to pay.

Third, voluntary health insurance, as advocated in the minority report of the Committee on the Costs of Medical Care, is inadequate because its cost is too high. Agents' commissions, organization and operation expense, salaries, surplus, and profits to companies, leave only a small amount of the premiums to be paid to the doctors who do the work. Insurance companies propose to allot only from 24 to 40 per cent of the premiums to the payment of fees.

Fourth, there is grave danger that under governmental subsidy of medical care the welfare of the patient will be subordinated to political expediency. Last June Senator James Hamilton Lewis, addressing the House of Delegates of the Ameri-

can Medical Association, said that he delivered "from the President of the United States a message coming direct with his authority." He also said that the administration contemplated calling physicians into the federal service. From unimpeachable sources I have learned that these statements were not in accordance with the facts, but their maker has not yet admitted their falsity, nor is he likely to do so. The episode shows why doctors fear, and why they have good reason to fear, that any expansion by the county, state, or federal governments of medical service to indigents to include the low income group, will ultimately result in the complete domination of the practice of medicine by politicians of the type which Senator Lewis so perfectly exemplifies.

Fifth, the cost of adequate medical service distributed among the under-privileged would not be burdensome to any of them. In Iowa we are fortunate in having some accurate information about costs. In 1929 a total population of 112,130 in three representative counties paid 89 physicians \$831,830.49, an average per capita of \$7.42, a little less than the average of \$9.00 paid annually by all the people in the United States. We also know the cost of good medical service to indigents. In Linn County adequate medical service, including ordinary drugs, is being furnished to the indigent population for seventy-five cents per month per capita, in spite of the facts that one-half of the families on relief receive medical service and one-half of the individuals receiving medical service receive no other relief. Doctors are paid fees lower than the schedule, but higher than would be collected from private patients with monthly family incomes of \$75.00. The excellence of the service, and its low cost, are made possible because the plan is under strictly professional supervision and control instead of being administered by amateurs.

Sixth, it is obvious that the trend of the governments, the foundations, social welfare workers, and the labor unions is all toward some attempt at the solution of the problem, regardless of what we doctors may do or think.

If these things are true, and they are true, is it not time that the organized medical profession itself should try to solve the problem? Every profession must serve, and this service must be controlled by the profession itself. If not, the profession is broken down. The times change, and so must we. Even now, in one of our county societies, a committee is at work on an endeavor to determine if some plan for rendering adequate medical service by the society to persons in the low income group is feasible and desirable, and if it is, to formulate such a plan. I hope its efforts may end in success.

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

In closing I cannot do better than quote Dr. Oliver J. Fay, who five years ago said, "Iowa has done some pioneer work in developing the plan of having the poor of the county cared for by the county medical society on some contract basis. In one form or another, this plan should be developed to cover not only the care of the indigent, but adequate care of those who can and should pay something, but who are unable to meet the entire cost of medical service."

In Iowa, we do not need governmental subsidies, we do not need commercial health insurance companies, we do not need help from the great endowed sociologically minded foundations. We do need unity in our own ranks. We need steadfast determination to solve this problem as our profession has solved so many others in the past. We need courage; and these things I think we have.

ADVANCES IN INTERNAL MEDICINE IN 1937

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In reviewing the advances in internal medicine for 1937 one is aware of unusual progress within the short space of twelve months and this article will attempt briefly to touch on the outstanding reports of the past year.

A comprehensive study of the basic physical and physiologic principles of air conditioning is reported by Yaglou¹ and indicates the future developments in this field. Sterilization of the air in operating rooms by the use of ultraviolet radiation has been shown to be effective by several investigators.

Bristol² in treating 19,000 individuals with stock vaccines or serobacterins found an apparent reduction in the severity, duration and complications of acute upper respiratory diseases, but no reduction in their incidence. Rosenow affirms his previous stand that colds and influenza are due to streptococci and notes lowered incidence and lesser severity with the use of his vaccines. Oral cold vaccines have not met with popular approval during the past year. Francis, et al.,³ in a study of influenza, was able to show that in the sera of patients with influenza there developed antibodies to the virus obtained from the nasopharynx. He believes the results of this study would permit a more accurate charting of the clinical boundaries of epidemic influenza and serve as a guide to the study of other diseases of similar characteristics.

The emphasis in pneumonia during the past

year has been toward a more widespread early use of the Neufeld typing of cases and in appropriate types the use of type specific serum which is now available for types I, II, V, VII, and VIII. Of 485 cases 66 per cent were within these types.⁴ There seems to be no question as to the effectiveness of sera if used early.

The subject of cardiology has held an important place in the reports of the year. Hurxthal⁵ reports that the number of total thyroidectomies for heart disease is decreasing, indicating a swing back from the enthusiastic trial of a new procedure. He believes there are some patients in whom the operation is justified, but they are few. This is probably due to the less favorable late results in some of the early cases. Feil and Beck⁶ report their results in twenty-five patients with advanced heart disease in whom a graft of skeletal muscle from the chest wall to the myocardium was performed. The mortality rate in the first twelve cases was 50 per cent, but in the last nine it was zero. The results have been surprisingly good. They believe the procedure for producing a collateral circulation is scientifically sound and its effectiveness will probably be increased by future study.

The appearance of coronary artery disease in young people is not new, but a study by Glendy, Levine and White⁷ is important in that it attempts to analyze the different factors possibly responsible for the early appearance of the disease. They found urban life, sedentary occupations and habits, possibly excesses of diet, the excessive use of tobacco, overweight, and increased nervous sensitivity and strain all more predominant in the young patients with coronary disease than in persons who are eighty years of age or older. Alcohol and serious infections did not seem to play important rôles. The relationship of coronary sclerosis and congestive failure to cardiac hypertrophy was studied by Davis and Blumgart⁸ and their results indicate that with lesser degrees of coronary sclerosis the heart undergoes little or no hypertrophy; with more severe involvement a slight or moderate degree of hypertrophy is noted, presumably due to impaired nutrition of the muscle fibers, which causes them to undergo stretching and hypertrophy. In patients with congestive heart failure the weights of the hearts are considerably increased.

Levy⁹ reports the occurrence of precordial pain from drinking coffee. He states that the pain is different from the anginal type in that it is not severe, is of relatively long duration, and is not induced by effort or emotion. It may radiate to one or both arms causing a sensation of heaviness or soreness. It is not relieved by nitroglycerin.

The clinical importance of this relationship is obvious.

In regard to the hereditary factor in essential hypertension the work of Hines¹⁰ in applying the cold pressor test is outstanding. The results of the cold pressor test were studied in 608 individuals and revealed that when both parents had a normal blood pressure and were normal reactors, all of the children were normal reactors. If both parents had hypertension or were hyper-reacting normals, 95 per cent of the children had hypertension or were hyper-reactors, and if one parent had hypertension or was a hyper-reactor and the other parent was a normal reactor, 43.4 per cent of the children were hyper-reactors or had hypertension. He believes therefore that the trait is inherited as a dominant characteristic.

Goldblatt¹¹ reported further experiments on experimental hypertension in dogs and monkeys by tightening a silver clamp placed around the main renal arteries. This is the only successful method at present of producing a persistent hypertension. The author believes the results indicate that this type of hypertension is due primarily to a humeral and not to a nervous mechanism initiated by the ischemia of the kidneys. The nature of this substance is not known. In some way the cortical hormone of the adrenal gland is thought to play a part in the pathogenesis of this type of hypertension.

In commenting on the surgical treatment of essential hypertension by extensive sympathectomy, Allen¹² believes that results in The Mayo Clinic have been sufficiently encouraging to justify further trial of this method in carefully selected cases. Their mortality rate was zero in 108 consecutive cases up to the time of his report. Opposed to this view we find the report of Page and Heuer¹³ who believe that the therapeutic results observed in nine representative cases do not appear encouraging. The ultimate place of surgical treatment of hypertension will no doubt depend on further experience with the operation and the development of more knowledge of the etiology of hypertension.

The report of Weiss and Wilkins¹⁴ concerning Vitamin B deficiency found in 120 selected cases of cardiac insufficiency was one of the outstanding studies of the year. They present a strong argument in favor of such an etiology in these cases. Jones and Sure¹⁵ in a preliminary report on thirty patients with cardiovascular disease, found that by the addition of Vitamin B this group was easier to manage, more contented and used less medication than any group they have had under their supervision. Further investigations along this line are anticipated.

Because of the widespread use of the mercurial diuretics the report of Poll and Stern¹⁶ is timely. They discuss a syndrome characterized by weakness, restlessness and mental confusion which may be followed by apathy, coma and death, in patients undergoing rapid diuresis. The mercurials are not indicted but they are usually the agent producing the rapid loss of water. Recognition and prompt treatment of the condition with water and sodium chloride by mouth or intravenously will usually restore the patient. The condition is sometimes not recognized because the symptoms are attributed to the sedatives which such patients usually receive.

Golden and Brams,¹⁷ following the report of Bowers and Mengle on the sudden death of two patients receiving calcium intravenously following digitalis therapy, studied the effect of this combination in dogs. Their results confirmed the earlier report. Death in their animals was apparently due to ventricular fibrillation.

McClure¹⁸ has reported on the use of iodized salt in Detroit for the prevention of goiter. This plan was instituted twelve years ago. Except for an increase in the first two years there has been a steady decline in the number of thyroid operations performed, until the last three years when a slight increase was noted. It is significant, says McClure, that this increase parallels a slight falling off in the use of iodized salt as determined by the percentage sales in a number of large grocery stores. The early experience appears to confirm the assertion that iodine may activate an adenomatous gland but the long range results quite overshadow the slight increase in thyroid dysfunction the first two years while instituting the general use of iodized salt.

Houssay¹⁹ in an extensive report summarized the inter-relationship between the pituitary gland, the thyroid gland, the adrenal glands and the pancreas in the causation and variations in diabetes. He states that an imperfect but suggestive conception of the diabetic state can be arrived at by considering the pancreas an anti-diabetic factor and the anterior pituitary, adrenal and thyroid glands as diabetogenic or diabetes stimulating factors. Regarding the diagnosis of diabetes the comparative study of Gould, et al.,²⁰ of three glucose tolerance tests is of interest. They compared the three hour one dose test of Janney and Isaacson, the six hour two dose test of Trangott, and the one hour two dose test of Exton and Rose. They used three known groups, non-diabetic, arteriosclerotic and diabetic patients. They claim the six hour two dose test is specific but too elaborate and inconvenient for the patient. They propose certain modifications of the Exton test which

make it 97 per cent sensitive and 100 per cent specific. They show the inadequacies of the old three hour one dose test.

The reception of protamine zinc insulin has lost some of its enthusiasm in the past year. While it is admitted to be a distinct advance in treatment²¹ it has failed in some cases and many patients have requested a return to regular insulin. Certainly protamine zinc insulin is not the last word and it does not help those patients who need it the most; that is, those who must take frequent doses with a large total number of units, and the group who swings so readily from shock to hyperglycemia. A disadvantage which has been reported^{21 and 22} is a high incidence of local reactions consisting of red, raised, indurated, painful areas sometimes as large as a silver dollar and lasting three days to two weeks. In some, mild local reactions tended to disappear after several weeks' use of the drug. Protamine zinc insulin is not recommended in the treatment of coma, but Kepler²³ finds it advantageous to give fifty units of protamine zinc insulin on admission, followed by the usual treatment for coma with regular insulin.

Crystalline insulin has been reported to be midway between regular and protamine zinc insulin in the duration of its action. It is slightly more effective, unit for unit, than regular insulin and there are fewer reactions.^{24 and 25} Many patients who have been sugar free on regular insulin, and changed to protamine zinc insulin and remained sugar free state that they feel better generally. It is agreed that patients under good control with protamine zinc insulin have a much smoother blood sugar curve during the twenty-four hours.

Diagnostic studies relative to pancreatic disease have been limited, so that Comfort's²⁶ analysis of the serum lipase in normal persons and in patients with a variety of diseases is worthy of note. Elevated values for serum lipase have been found in 95 per cent of the cases of acute pancreatitis, in 36.5 per cent of those of carcinoma of the pancreas, and in 60 per cent of those of carcinoma of the ampulla of Vater. In the presence of painless jaundice an elevated serum lipase value will usually point to the presence of carcinoma of the head of the pancreas. Serum lipase values were elevated in seven per cent of cases of duodenal ulcer and in only thirteen per cent of cases of diseases of the liver.

The use of the gastroscope has increased since its advantages were emphasized by Schindler. Schloss, et al.,²⁷ examined one hundred patients with the x-ray and gastroscope. They concluded that for the diagnosis of gastritis, gastroscopy is by far superior to x-ray relief technic. Erosions and atrophy of the stomach mucosa can be diag-

nosed, for all practical purposes, by gastroscopy only. Gastric ulcers are diagnosed more frequently by direct visualization than by x-ray. For the diagnosis of stomach tumors and postoperative changes, x-ray and gastroscopy supplement one another in an almost ideal way. With further cooperation between the gastroscopist and the roentgenologist the recognition of gastritis by x-ray technic is increasing. Schindler,²⁸ however, claims that gastroscopy, which is safe, easy and causes little discomfort, is the only method permitting accurate diagnosis.

A reversal from the usual low fat diet for gallbladder disease is reported by Brown and Dolkart.²⁹ Treatment by high fat diet was instituted by Brown in 1924 with promising results. The present report deals with the results obtained by a combination of high fat diet, keto-cholanic acids and antispasmodic medication. Only four patients out of sixty-five in the series failed to improve subjectively. A diagnosis of chronic cholecystitis in these cases was based on the history and an abnormal cholecystogram.

Experimental work on the relation of diet to the course of chronic nephritis is reported by Farr and Smode.³⁰ Chronic nephritis was produced experimentally in forty-eight young rats which were then divided into three groups. The first group was fed a low protein diet, the second a moderate protein diet, and the third a high protein diet. At the end of eleven months the first group was clinically recovered while every animal on the high protein diet developed progressive nephritis; the second group gave intermediate results. Pathologic examinations confirmed the clinical findings. The authors concluded that in rats chronic progressive nephritis can be produced experimentally, and that the course of the nephritis is markedly influenced by diet. Further studies will undoubtedly be added in the future.

Vitamin A deficiency in patients with renal lithiasis was confirmed by Ezickson and Feldman³¹ who found that 96 per cent of such cases were associated with a Vitamin A deficiency as determined by the dark adaptation test. They found, however, that administration of large amounts of Vitamin A (13,000 to 52,000 units) failed to decrease the size of the stones and only in one instance was there any improvement in the test for Vitamin A deficiency. They believe that there is a lack of assimilation or utilization of Vitamin A rather than a dietary deficiency. Oppenheimer and Pollach³² found similarly disappointing results in the treatment of renal lithiasis by high-vitamin, acid-ash diets. Improvement in the dark adaptation test was reported by nearly all of a treated group of medical students who had

been found to have below normal adaptation tests. This study by Jeghers³³ was not done in connection with lithiasis.

In a report on mandelic acid Braasch³⁴ states that this drug will be bactericidal in 80 per cent of cases of uncomplicated urinary infections. Organisms which have responded are *Escherichia coli*, *Aerobacter aerogenes*, *Proteus*, *Pseudomonas*, *Alcaligenes*, *Salmonella* and *Shigella*. The drug is efficacious in coccal infection in children and to a lesser degree in adults. There are no indications that it is a severe renal irritant in the presence of a normal renal function, but it does not seem advisable to continue the treatment longer than two weeks at one time. Sulfanilamide as a urinary antiseptic will be discussed later.

In a review of the American and English literature on arthritis in 1936³⁵ consideration was given to 593 articles and in addition fifteen books were listed but not reviewed. This gives an impression of the multitude of opinions one must consider in this single subject. If I were to pick out one new therapeutic approach I would choose induced jaundice. In 1933 Hench reported that intercurrent jaundice caused an amelioration of arthritic symptoms in twelve patients. Last year Thompson and Wyatt³⁶ reported the successful production of therapeutic jaundice by the repeated intravenous injection of a mixture of bilirubin and bile salts, with the same analgesic effect observed previously by Hench. While this is an entirely new approach to the problem, and without confirmation, it looks promising. The value of hyperpyrexia for the arthritis of gonococcal etiology has again been confirmed during the past year.

An opportunity to test the efficacy and practicability of intranasal spray with one per cent zinc sulphate for protection from poliomyelitis was afforded in Toronto.³⁷ This method was used in 5,233 children and produced anosmia in about 25 per cent. In the period from seven days after the first spraying to thirty days after the second spraying there was an incidence of poliomyelitis of 2.1 per cent. In a control group of 6,300 children the incidence was 2.9 per cent. The difference was not considered statistically significant, and the authors did not consider the method a practical public health procedure.

Lymphocytic choriomeningitis has been the subject of several reports in the past year,^{38 to 41} all attesting to the virus etiology and concurring in the benignancy of the condition, although one fatal case was reported.

Probably the most outstanding advance of the year, is the successful use of sulfanilamide.^{42 to 52} Since the first report in this country by Long and

Bliss in January, 1937,⁵² the literature has been added to by several articles monthly. Perhaps here we should discuss two sides of the story; namely, the diseases in which success has been claimed and the complications encountered in the use of this product. This product was originally recommended for infections due to beta hemolytic streptococcal infections. Since the first report other authors have recorded the successful treatment with sulfanilamide of streptococcal and meningococcal meningitis, erysipelas, gonorrhea, and in urinary infections, except those due to *Streptococcus fecalis*. Others have given the drug a trial in pneumococcus pneumonia where type specific serum is not available. The mode of action appears, according to Long and Bliss, to be due to bacteriostasis.

The complications have been numerous but not sufficient to detract from the proved value of the drug. Lassitude, vertigo and headaches are common and do not require reduction in the dosage or cessation of the drug's use. Cyanosis is frequently noted but is not a serious complication. The patient appears more ill than he really is, and the cyanosis, which is due to sulf- or methemoglobin, soon disappears when the drug is withheld. Special complications of a more serious nature have been reported. Acute hemolytic anemia sufficient to require several transfusions was noted in several cases. Agranulocytosis with death has been observed. Skin eruptions of a maculopapular and morbilliform character, with minute unerupted vesicles, have been seen frequently. Exposure to sunlight appears to increase the likelihood of skin disorders from sulfanilamide since several cases have been reported in which the rash appeared only on the one portion of the body which had been exposed to direct sunlight. Fever has been noted in some patients and attributed to the drug. This has been confirmed by several authors. Toxic optic neuritis was reported in one patient while he was using sulfanilamide. In discussing complications mention should be made of the unfortunate use of the elixir of sulfanilamide-Massengill which caused the deaths of over one hundred persons. It has been definitely proved that these deaths were due to the vehicle diethylene glycol used to prepare the elixir. Because of the excellent publicity given this subject I believe it is well known that these deaths could not be charged to the sulfanilamide contained in the elixir.

The subject of sulfanilamide therapy is well summarized by Long and Bliss⁴² as follows:

"1. Clear experimental and clinical evidence is available which leads us to believe that sulfanilamide and its derivatives constitute powerful chem-

otherapeutic agents in the treatment of hemolytic streptococcal infections.

2. Experimental and clinical data support the use of this drug in meningococcal infections.

3. The clinical results obtained in treating gonococcal infections have been favorable.

4. Sulfanilamide has certain serious toxic effects upon the hematopoietic system.

5. The careless and reckless use of sulfanilamide is unwarranted, and will undoubtedly result in fatalities."

It has been impossible to cover all the many valuable contributions in so fertile a year but an attempt has been made to discuss some of the outstanding contributions.

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PITFALLS IN THE TREATMENT OF
VARICOSE VEINS*

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What are the pitfalls in the treatment of the peripheral vascular system of the extremities? This question leads one to consider the essential factors before treatment is to be recommended and to decide what to do after treatment is begun.

It is as necessary to obtain a history in a case of incompetence of the peripheral vascular system of the lower extremities as it is to obtain a history when a patient seeks medical assistance for some obscure physical disability. History reveals the background of inherited weakness and familial characteristics and discloses the occurrence of severe illness or injury or the performance of an operation and the subsequent occurrence of phlebitis. Physical examination may reveal structural characteristics, as example, the short type of person who has massive hips and legs, or a person who is of medium height with normally distributed weight on the trunk and legs and who has abnormally massive thighs. Certain persons have straight, massive legs, large bony structure and large ankles which are normal for them. They should be informed that the swelling of their legs will be diminished only to the extent of elimination of the varices. One should inquire when the first symptoms of peripheral vascular interference were noted. It also is important to learn if the veins become large and tortuous, how long such changes in the skin as local edema, pigmentation and pruritus were present; when swelling of the ankles occurred, and whether an ulcer was present. A diagnosis of arteriovenous fistula may be made if measurement from the anterior superior spine of the ilium to the lower tip of the internal malleolus of the same side shows a lengthening of the extremity, if one extremity is more moist than the other and if there is any evidence of a thrill in the extremity. Further evidence is ob-

tained by determining the amount of oxygen in the plasma.¹

Before a patient is examined for varicose veins his clothing should be removed to the hips; he routinely should be in the standing position, preferably on a platform. A cross bar should be dropped from the ceiling to afford stabilization. This position permits one to discern the amount of involvement. If there is a history of thrombophlebitis, the abdominal wall should be examined for distention of the thoracico-epigastric, parumbilical and other veins on the abdominal wall.

There are various tests for patency of the deep veins, namely, the Trendelenburg and Perthes tests, both of which are satisfactory. The test requiring the least trouble, however, is to bandage the leg from the ankle to the knee with an Es-march rubber bandage, and then ask the patient to walk around for a couple of hours and return for examination. If the deep veins are patent, no discomfort will be experienced; on the other hand, any marked degree of occlusion will cause discomfort, and if the occlusion is complete the patient will not wait for the end of the two hours but will remove the bandage to obtain relief from the pain caused by impeding the return peripheral circulation.

Palpation of the extremity is important to determine the presence of edema and cirroid dilations, especially in the thigh. Cirroid enlargement of the internal saphenous vein in the fossa ovalis may be mistaken for a femoral hernia. Differential diagnosis is easily made by means of bimanual palpation when the patient is standing. If the enlargement is attributable to a cirroid dilatation, pressure on the dilatation will be transmitted in the internal saphenous vein in the form of an impulse which can be felt in the lower third of the thigh and in the leg. In the small saphenous vein, a cirroid dilatation occasionally may account for failure or delay in producing sclerosis of the vein. When the patient complains of pain on standing, one never should fail to search for a spur on the os calcis.

A hernia of a muscle sheath may be single or multiple. These hernias resemble buckling of a varix beneath the skin and may be associated with varicose veins, but they usually are found to occur in the middle and lower third of the leg on the lateral and medial surfaces and may be single or multiple.

The diagnosis is made by requesting the patient to rise first on the toes, thereby putting the extensor group of muscles into action. If herniation of the sheath disappears, the possibility of

*Read before the Buchanan County Medical Society, Independence, March 31, 1938.

varicose veins is eliminated. The reverse action of the muscles is similarly brought into play to diagnose herniation in the flexor group of muscles. There are instances when a varicose vein is situated over a hernial sheath, in which case treatment is similar to that of any varix.

The technic of injection should be as simple and uncomplicated as possible. The reverse flow of the blood in a varicose vein is well known; therefore, there need be no concern about injecting the sclerosing solution from above downward, beginning at the upper third of the thigh. When ligation is contemplated it is my custom to mark the site of the course of the internal saphenous vein by scratching the skin with a needle in the proximity of the juncture of the saphenous and femoral veins, in order to facilitate the operative procedure under local anesthesia. The sclerosing solution can be injected distal to the point of ligation. On rare occasions the internal saphenous vein bifurcates as it joins the femoral vein, and double ligation is necessary. After the injection has been made, an ordinary gauze pad is applied over the varix, especially if a plaque of varices is present. This pad is covered rather firmly with a bandage, which is left on for a few hours.

The solution of choice should best be injected in a small, initial dose into some varix on the leg the day before to determine whether a reaction will occur. Occasionally, allergic reactions contraindicate the use of a particular solution. Fortunately, one does not encounter this condition commonly. The tendency in the past has been to use too large a needle to puncture the vein. The smaller the needle, the easier the puncture of the skin and venous wall and the less the discomfort to the patient. A number 26, one and one-fourth inch needle is sufficient for all ordinary purposes, even when the vein is deep in the subcutaneous tissues of the thigh. Syringes should range from two to five cubic centimeters to facilitate handling. I feel that certain well known procedures should be carried out wherever injections are attempted. The plunger of the syringe must fit tightly and the barrel must be well lubricated to prevent interruption of the forward movement of the plunger. The syringe should be held in such a manner as to prevent any interruption of the injection by movement of the patient. The needle within the lumen of the vein must be held steadily to avoid transfixion, and by introducing the needle with the bevel directed downward, spill is less likely to occur. When in doubt as to the situation of the needle,

the injection should be discontinued. Smarting should always put the physician on his guard.

The prevalent belief that an existing thrombophlebitis precludes injections for several months is erroneous. Unless the existing phlebitis is generalized, that is, unless the whole extremity is involved and systemic manifestations such as fever and malaise are present, the injection may be made. In my experience sequelae have not occurred when this procedure is followed. The initial dosage in such cases should be small, since reactions are likely to occur in the presence of a localized inflammatory process. If nothing more than the usual reaction occurs, the dosage may be increased.

The error of beginning injection too soon after a major operation sometimes puts the physician who performs the injection into difficulty. Assuming that a surgical patient has been out of the hospital for only two or three days, it is not unreasonable to suspect the existence of a migrating thrombus. If such a thrombus is present it may be liberated into the blood stream and, if that is to occur, the accident probably will take place in the first week after the patient is up and about. If injection is performed in that first week, therefore, the injection may be mistakenly blamed for the accident.

In the treatment of varicose veins during pregnancy, if the varices existed prior to the present pregnancy, one should proceed with the treatment, but if new varices are forming, it is just as well to withhold treatment until after delivery. When the pressure of the fetus is relieved, prominence of the veins lessens appreciably. Occasionally, varices of the vulvae are markedly distended and when such distention occurs in the early part of pregnancy, treatment is indicated; but when it occurs in the sixth or seventh month or thereafter, the soreness from the chemical thrombus would be as irritating as the original varix.

One of the most alarming complications is the occurrence of pulmonary infarction. This may occur as early as the fifth day and as late as the nineteenth day after the initial injection. The symptoms are in proportion to the degree of involvement. If the patient says that his side hurts on deep inspiration, even though there is no dyspnea or rusty sputum, one always should rule out pulmonary accident by placing the patient in the hospital and observing him for a few days. A roentgenogram will assist in early cases if the infarction is extensive. If the involvement is minimal, a roentgenogram may not

disclose any change for several days. It is my opinion that this accident occurs more often than is reported, but that the condition is not diagnosed or the symptoms are considered to be the result of a cold and pleurisy. Death, when it occurs, usually does so within twenty-four hours. It rarely occurs later, although complications such as pulmonary abscess may occur. Our procedure at the clinic is always to assume that an accident has occurred regardless of the severity of the symptoms and to treat the patient accordingly.

If a patient is believed to react to foreign substances, test doses should be administered before the therapeutic injection. The allergic reaction may produce sudden dilatation of the capillaries of extremities to the whole body. The erythema and pruritus last fifteen to twenty minutes. If the patient has a sensitive skin, any extrinsic stimulus may precipitate reactions, and the manifestation in the skin may continue for a considerable period. Some authors have reported that death has followed the injection of the sclerosing solution into a varicose vein. I am inclined to think that such deaths are the result of an idiosyncrasy to the sclerosing solution and that collapse occurs when the solution reaches the heart through an injection into a normally functioning vein. Once in a while, when an injection is made in the region of the saphenous nerve, the sensory branch of the lumbosacral plexus, which emerges from the deep tissues on the medial surface of the knee, is stimulated. This produces a sharp pain in the back, which is similar to a lumbago. Catchy respiration is intense for a minute or so, and then disappears.

A varying degree of shock is commonly encountered; this varies from a fainting spell to surgical shock which is associated with a total collapse, disappearance of the pulse, a clammy skin, sweating, loss of reflexes, ashen pallor and dilated pupils. Recovery occurs promptly and the patient is able to leave the office without assistance in a few minutes. When a systemic shock occurs, the systolic pressure drops to alarmingly low levels and the pulse becomes imperceptible. The condition resembles typical surgical shock described by Crile in his monograph on "Causes of Surgical Shock." Lockhart-Mummery¹ delivered the Hunterian lecture in 1905 on the "Cause and Prevention of Shock"; and both writers advanced the theory of exhaustion of the vasomotor nerve centers as the initial cause of shock.

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FINDING SYPHILIS THROUGH THE LABORATORY*

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In employing laboratory tests as an aid in the diagnosis of any disease, the following possibilities exist:

1. The causative organism may have such peculiar morphologic characteristics as to be readily recognized; for example, the malarial plasmodia.

2. The causative organism may be capable of growth on laboratory media, and in such growth may exhibit cultural characteristics which are so peculiar as to identify it; for example, blastomycetes.

3. The causative organism, if introduced into a susceptible animal, may stimulate a specific defensive response in the form of agglutinins, precipitins, or antitoxins. These, in turn, may be used to help identify the suspected culture. Specific agglutinins are used to assist in identifying typhoid organisms.

4. The causative organism, if introduced into a susceptible animal, may elicit a defensive response which consists of sensitizing the tissues to the causative organism, or to some of its metabolic products. Examples are such reactions as result from the intradermal injection of tuberculin, or brucellergin.

5. The defensive response just mentioned may be effective against some other organism which can be readily cultured and subjected to these immune bodies. For example, the serum of patients ill with typhus or typhus-like diseases, will agglutinate various strains of *Proteus*. By this means, the laboratory can aid in the diagnosis of these diseases.

6. The causative organism, if introduced into a susceptible animal, may elicit defensive responses or cause changes which can be detected, if at all, only indirectly and on a presumptive basis.

In spite of exhaustive studies to apply these various modes of approach, only the first and the last afford any present hope of rendering laboratory assistance in the diagnosis of syphilis.

The first, namely morphologic characteristics, offers promise at the onset of the primary stage, or in the secondary stage, if the material is properly collected and handled. The causative organism, *Treponema pallidum*, is visible under dark field examination, has a somewhat characteristic

*Presented before the Twelfth Annual Meeting, Iowa Public Health Association, Des Moines, May 10, 1938.

appearance and form of motility, and exhibits certain staining characteristics. If the serum which exudes from an abraded chancre or secondary lesion is collected in capillary tubes, the latter sealed in vaselin, and protected from excessive heat, the organisms will retain their motility for prolonged periods. Handled in this way, they have been shipped back and forth across the Atlantic Ocean for examination in laboratories, and the motility has continued even under such circumstances. The organisms, however, are extremely vulnerable to drying and to heat. Death of the organisms, due presumably to thermal causes, results from exposure for five hours to a temperature of 39 degrees C (102.2 F), three hours at 40 degrees C (104 F) or two hours at 41 degrees C (105.8 F). Incidentally, it may be remarked that this list of thermal death points provides the basis for the treatment of patients by artificially induced fevers. Furthermore, the temperature used in inactivating suspected sera prior to the tests so far exceeds the thermal death point of the organism as to render such sera non-infective, a point of importance to workers in serologic laboratories. It is recommended that physicians send to the laboratories properly collected specimens of serum from primary and secondary lesions because the demonstration of the presence in such fluid of treponema identical morphologically with *Treponema pallidum* offers direct evidence as to the nature of the infection.

In regard to the other modes of approach to laboratory diagnosis, there is no unanimity of opinion that the organism has ever been cultured on laboratory media. There is considerable dispute as to whether a real immunity is produced by infection, and certainly no one has been able to demonstrate specific agglutinins, precipitins, or antitoxins. Thus far, no one has been able to demonstrate any possibility of indirect diagnosis by means of agglutination phenomena comparable to the Weil-Felix method. Although attempts have been made to test by means of luetin the possibility of sensitization, no present dependence can be placed upon that method.

Thus, we come to the last named possibility; namely, that of testing for abnormal substances which may be in the serum of those who have been infected with syphilis. The tests employed are complicated and, in their performance, require considerable technical skill. In general, these tests make use of an antigen of lipoidal nature which is extracted from beef heart or other normal animal tissues. This antigen is modified in various ways according to the test which is to be used. It has been found that syphilitic serum contains abnormal amounts of a substance of unknown

nature (reagin) which reacts with the lipoidal antigen just mentioned. Such reactions can be detected by two general methods; namely, complement fixation and precipitation. If the complement is mixed with antigen and a serum which contains reagin, the complement will be markedly affected. The various modifications of the Wassermann test measure the degree to which the complement has been bound, and in this way determine the relative concentration or potency of reagin in the suspected serum. The precipitation tests, of which those devised by Kahn and by Kline may be cited as examples, involve procedures which result in the formation of precipitates when reagin and antigen are mixed together. The appearance of a precipitate under these conditions indicates that reagin was present in the suspected serum.

It is important to emphasize that whatever the method employed, these tests indicate the presence or absence of reacting substance or substances to which the term *reagin* has been applied. The tests differ among themselves as to their sensitiveness in detecting this substance. Therefore, if the level or potency of the reagin is low, it is quite possible for a serum to be found positive by one method, doubtful by another, and negative by a third. Such results mean that the reagin was present in sufficient amounts and potency to affect two tests, but not the third. It should be noted, further, that there is nothing in the test materials which makes the tests specific for any particular disease. Positive tests tell us merely that reagin is present in sufficient amount and potency to cause reactions. They tell us nothing as to the source of the reacting substance detected. It is common knowledge that reacting substances sufficient to affect these tests occur in infections with syphilis, malaria, leprosy, relapsing fever, trypanosomiasis, and yaws, and that, temporarily, such substances may rise to the detection level as the result of acute febrile attacks of various kinds. However, there is no disease in which the levels and potency of reagin are so uniformly and persistently high as they are in syphilis. The specificity and sensitivity of these various tests are dependent upon the skill with which their reacting levels are adjusted to the levels of reagin commonly found in syphilitic serum. On this basis, the tests are surprisingly specific, as has been demonstrated by many carefully controlled studies.

Nevertheless, in considering the significance of a positive serologic report, one should always keep in mind these other possibilities. Initial positive reports, unless they are fully supported by clinical evidence or history, should invariably be verified

by one or more subsequent tests before a diagnosis is finally made. If a serum is definitely and persistently positive, that is, if it has been found positive by more than one method and on more than one occasion, there is very strong presumptive evidence that the source of the reagin is syphilitic infection, even though the history and clinical findings may be negative. The value of these tests in finding syphilis is that positive tests force the physician to consider the possibility of that disease, and they add strong presumptive evidence to that which he may have secured from the history and clinical study of the individual.

As long as we consider these tests as an aid to diagnosis, we are on safe ground and when so used it is difficult to over-estimate their value. When, however, we attempt to go farther and to attribute to them an absolutely diagnostic value, we immediately step upon treacherous ground. Unfortunately, there is a tendency on the part of the laity and even of physicians to consider positive tests to be absolutely diagnostic of syphilis. Such an assumption, in effect, would make the serologic laboratories the arbiters as to whether people are to be permitted to marry, or to engage in certain occupations, or to be branded as syphilitic individuals. In this connection, it may be appropriate to mention again the fact that the tests differ in their sensitiveness to the reagin, and that no single method of testing can be depended upon to pick out all positive sera. In certain states which base the issuance of marriage certificates upon the results of serologic tests, the Kahn test is used exclusively. During the past five months, we have found in our laboratory, 222 individuals who gave negative reactions to the Kahn test. All of these presented definite positive reactions to the Kolmer test, and 125 reacted positively to the Kline test. In addition, 159 Kahn negative reports were doubtful by the Kolmer method. On the basis of the Kahn test, these 381 individuals would have been allowed to marry, would have been accepted as blood donors for transfusions, or for donors of immune serum, and would have been considered free of syphilitic infection. In our series, inconsistency to practically the same degree would have resulted had sole dependence been placed upon either the Kahn, Kline, or Kolmer tests. Thus, it is evident that dependence upon one method of testing is not sufficient. Multiple methods of testing are required, if we are to derive the maximum degree of assurance from these tests.

In this state, thanks to the efforts of the State Commissioner of Health, who secured for the laboratory increased state appropriations as well as assistance from the United States Public

Health Service, free serologic service has been available since July 1, 1937. During the ten months ending April 30, 1938, approximately 66,000 specimens have been examined serologically. This is almost double the number examined at the corresponding period of the preceding year. Of this total, 37,081 have been examined under the multiple test procedure. Under this system, all specimens are first subjected to screen tests which consist of a hypersensitive complement fixation test, and the Kline standard precipitation test. All specimens which are found completely negative to both of these tests are forthwith reported as negative. These screen test negative reactions constitute approximately 80 per cent of the specimens examined at the State Hygienic Laboratory. The remainder are further tested by the standard Kahn, the presumptive Kahn, and the Kolmer (complement fixation) tests. In percentages of the total specimens examined (37,081) the final results have been as follows:

Method of examination	Per cent positive
Kline (precipitation)	9.5
Kahn (precipitation)	7.6
Kolmer (complement fixation)	8.1
By two or more of the above	8.5
By all three of the above	6.0

The specimens received at the laboratory include a heavy weighting of original and repeat specimens from individuals suspected or known to have syphilis, many of whom are under treatment for that disease. It is impossible to segregate these specimens from those submitted in routine examinations. Consequently, the percentages just cited afford no means of measuring the prevalence of the disease in this state. In this connection, it may be of interest to point out that in a composite group of some 5,594 individuals examined during surveys, the percentage of sera showing reactions was 0.9 per cent. This group was composed of students at the State University of Iowa, Iowa State College, Drake University, Morningside College, Coe College, and Simpson College.

Inasmuch as the above percentage includes all reactions, whether positive or doubtful, some of which we know proved not to be specific, it is evident that the incidence of syphilis in this group is considerably less than one per cent. Insofar as information now available to the laboratory is concerned, the incidence of actual infection in this particular group of students probably does not exceed 0.5 per cent. In another group of 785 individuals tested as possible donors of convalescent sera, positive and doubtful reactions occurred in two per cent.

SUMMARY

1. The finding of *Treponema pallidum* in the

fluid from primary or secondary lesions constitutes direct and specific laboratory confirmation of syphilitic infection.

2. Positive serologic reports, whether of the precipitation or complement fixation type, indicate the presence of a reacting substance in abnormal concentration or potency.

3. The presence of reacting substance at levels which affect these tests may be the result of various diseases or conditions, of which syphilis is the most common and important.

4. At the levels to which these tests are adjusted, persistently positive reactions afford strong presumptive evidence of syphilitic infection.

5. Because of variation in the sensitivity of the various methods of testing, the use of multiple tests is strongly advised and the confirmation of all positive tests is urged, unless these are fully supported by clinical evidence.

6. Data assembled from surveys among 5,594 students at six educational institutions in Iowa showed a reaction rate (for positive and doubtful reactions) of 0.9 per cent.

JAPANESE PERSIMMON BEZOARS

Report of a Case

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Of the foreign bodies found in the stomach of man, bezoars represent the process of concretion of elements which *per se* are usually numerous, relatively small, soft, pliable and intrinsically innocuous in contradistinction to more or less definitely solid objects swallowed as such and objects entering the stomach from the duodenum or through the wall of the stomach. Bezoars are of two main types or a combination of these. The more common is the trichobezoar or hairball. Less common, but more interesting because the ingredients are often substances of recognized food value, are the phytobezoars or food balls. Granting the presence of the gum constituent of some of the elements, notably the persimmon, in phytobezoars, one still is mystified as to why the concretion process is operative in relatively few instances of the ingestion of persimmons, and not generally.

Analysis¹ shows that the persimmon contains 14.10 per cent of gums and pectin which have been alleged to be the binding substance. Hyperacidity of the stomach contents has commonly been found in association with the bezoars. On the other hand Hart² cites a case of achylia gastrica and bezoar in which, following the administration of dilute hydrochloric acid, a cure without

surgery was effected, as shown by the disappearance of the bezoar on x-ray examination. The solution of the problem involved is the finding of a solvent which could be safely used either as a preventive of the concretion process to be taken at the time of the ingestion of the persimmon, or the bezoar being present to accomplish disintegration of the concretion followed by elimination by stomach or rectum or both. Failing this the public should be warned to eat persimmons at its peril or face possible operation.

Durrance³ states "I am unable to find any reported cases due to the Japanese persimmon (*Diospyros kaki*). * * * The fruit of the Japanese variety is larger and contains less solids and residue than the native species." In this connection the patient about to be reported upon has stated that except for a very few persimmons native in Indiana eaten in childhood she had eaten the Japanese variety exclusively. She had partaken freely of these for a month or two before operation, and usually separately from other food, although eating the persimmon separately probably has no causal relation in the formation of bezoars. Phytobezoars are composed primarily of the stems, skins, seeds and fibers of vegetable material and may include muscle fibers, elastic tissue, epithelium, fats, fatty acid crystals and starch granules. Besides the persimmon as the common constituent other fruits and vegetables as prunes, raisins, pumpkin, bran, salsify and celery may be conspicuous together with the food detritus as indicated.

Durrance³ and Murdock⁴ have reported on the geographic distribution of reported cases of indigenous persimmon bezoars and the habitat of the trees respectively. The latter states "The persimmon belt extends south from Massachusetts, New York, Northern Ohio, Indiana, Illinois and Kansas. Kansas, Oklahoma and Texas are the western limits of the trees." The geographic restrictions indicated would not, of course, apply to the Japanese persimmon bezoar which may occur wherever this variety is marketed. Trichophytobezoars refer, of course, to a combination of the hair and vegetable materials. They represent an association of the essential defect of digestion of the phytobezoar and the mental deviation implied in those who swallow hair. While the trichobezoar may and often does exhibit layer formation the phytobezoar shows an absence of accretion in layers and presumably is formed at one time. Also, the phytobezoar while at times associated with organic lesions of the stomach, such as ulcer, are not commonly so associated and the ulcer may be secondary to the bezoar. Pyloric stenosis as a predisposing or essen-

tial item of causation is conspicuous by its absence. In addition there are mineral bezoars composed of the remnants of shellac drunk for its alcohol content, and bezoars of bismuth made up of the carbonate which in one case had been used as the opaque medium in a gastro-intestinal x-ray examination and salol which had been taken in large quantity. Lastly hematobezoar occurs rarely and represents an organized blood clot following hemorrhage from an organic lesion of the stomach.

Of surgical cases of known phytobezoar of persimmon origin Durrance found a total of thirty-five cases reported in the literature between 1894 and 1934. During this time there is a period of twenty-eight years between the first and second cases, while in the remaining twelve years thirty-four cases have been recorded. Of these Durrance has contributed five case reports. The forty years in question roughly cover the span of development of gastric diagnosis and surgery. Since there is no reason to believe that a corresponding hiatus obtained in the ingestion of persimmons during these years, we must believe cases were either not recognized and not operated upon, or the operated cases were not recorded in the literature. It is probable that some cases have been regarded as inoperable gastric carcinoma. Of these a few but very conspicuous cases by virtue of spontaneous elimination of the bezoar probably are the miraculous natural recoveries from cancer of the stomach occasionally alleged and discussed.

CASE REPORT

The patient was a white female fifty-four years of age, a widow, and a stenographer by occupation.

Chief complaint: Outstanding complaints were cramp-like pain becoming continuous and severe enough to double the patient up, repeated and severe vomiting, shock, cold sweat, etc., and jaundice.

Present illness: Pain had been present for a year at irregular intervals and bright red blood was observed in the stools, seemingly associated with abstemiousness in eating. Gnawing pain two hours after meals often occurred (on an empty stomach) for many weeks before the culminating attack on April 20, 1935. Considerable nausea without vomiting was experienced and about every two months attacks of vomiting occurred accompanied by prostration. The pain started in the sternum and passed through to the interscapular back. Often, but not invariably with attacks, the stools were putty colored and mucus was present. For two weeks before the final attack the

bowels were free. The stools were copious, soft to liquid and without mucus. Their color was normal to dark but not red nor black. In spite of the absence of the ingestion of oil drops of oil were observed in the stools. For several months before the final attack the patient had noticed a "musty" taste and smell but at no time was halitosis detected by others. Not until after the removal of the bezoars was it ascertained that the patient had for several weeks eaten freely of Japanese persimmons, the lunch often consisting exclusively of three. The final attack began at six o'clock in the morning with severe griping in the abdomen followed by a stool containing much mucus and of mixed light to dark color. The griping, in spite of which patient ate breakfast, recurred during the forenoon and at 11 o'clock she was forced to stop work. En route home nausea was followed by vomiting twice. At home the pain became agonizing in addition to the griping. At two o'clock in the afternoon apomorphine was given hypodermically and about eleven o'clock



morphine with relief. By the next night she was able to travel and entered Mercy Hospital, Dubuque, Iowa. During the morning of April 22, 1935, for about fifteen minutes she experienced abdominal distention and pain. No food had been taken since the morning of April 20. The bowels responded slightly to an enema. A tentative diagnosis of cholecystitis had been brought by the patient. Aside from the above the only symptoms complained of were frequent occipital headaches and more or less burning of the eyes.

Previous history: The patient had had measles, mumps and cholera infantum in childhood. A fistula in ano had been surgically treated in 1910 following labor. In January, 1929, a panhysterectomy had been done for a tumor of the uterus. In the summer of 1934 the patient suffered attacks of asthma, and she had been given a preparation containing grindelia which has a resin con-

tent. In 1928 the patient spent a fortnight in Brazil and in 1929 more than a month in the South Sea Islands and New Zealand, but in neither instance was there more than a suspicion of tropical disease acquisition.

Family history: The father died at seventy years of age with carcinoma of the liver, the mother at seventy-two years of age, was living and well after an operation for cholelithiasis at sixty years of age. Two brothers were living and well, and one son twenty-five years of age.

Physical examination: The patient was a well developed female weighing 190 pounds, who appeared not to be suffering, but alert and responsive. Nothing of importance was disclosed after a thorough examination. No masses could be felt in the abdomen. The anal and rectal examinations were negative, and the kidneys were not palpable. The blood count and urinalysis showed nothing abnormal. An x-ray examination of the gallbladder showed normal function. Fluoroscopic and film x-ray examination of the stomach showed a large round filling defect in the mid-portion of the stomach with multiple smaller defects in the pyloric portion of the stomach characteristic of multiple benign tumors. No infiltration of the gastric wall could be demonstrated and peristalsis passed through normally. The conclusion was multiple benign tumors of the stomach.

Preoperative diagnosis: The patient came with a diagnosis of gallbladder disease. An 85 per cent accuracy of cholecystograms after the dye, the negative x-ray findings, the absence of infection, and the absence of localized tenderness in the gallbladder region, made me doubt the accuracy of bile tract pathology in spite of a subicteric tinge to the sclera and the skin. The relative paucity of positive signs and the ambiguity of these, inclined one to accept the positive x-ray findings of masses in the stomach. Since bezoars were not considered the diagnosis of multiple benign neoplasms of the stomach was accepted.

Operation: On April 29, 1935, a median incision through a thick abdominal wall disclosed an omentum adherent to a suprapubic scar, a thickened appendix containing fecoliths, a bile tract normal except for a small velamentous adhesion of the inner aspect of the gallbladder, a negative liver and a large stomach which to inspection and palpation seemed normal. Upon opening the stomach we detected nothing abnormal at the moment. The exploring hand within the stomach, however, detected high up in the cardiac antrum a mass the size of a very large prune. Various kinds and sizes of forceps served to push the mass upward and the hand alone extracted the mass

with the least disturbance to the field of operation. Further exploration revealed a comparable mass higher up which was also removed. Nothing else was found, and the wounds were routinely closed. Except for a slight tumefaction at the site of an hypodermoclysis, recovery was uneventful. The patient left the hospital May 14, 1935, and returned to work about a month after the operation. Reporting in September, 1937, she stated that whereas there were no symptoms or signs referable to the stomach there had been on two or three occasions a slight return of blood in the stool. Advice to have this item investigated was ignored. The specimens removed at the time of the operation consisted of two concretions essentially equal in size, roughly cubical with rounded edges, faceted surfaces, brown in color with variations from dark to light, having the consistency varying from a firm rubber sponge to cork and having an odor indistinguishable from that of the stomach contents. Where the surfaces were darkest they were smooth, and where light they were more porous and revealed the mesh arrangement of the fibers. The composition proved to be vegetable fibers resembling those of the persimmon. Each displaced twenty cubic centimeters of water and weighed twenty grams. With lapse of time the size and the weight diminished materially.

Comment: From long observation, either continuous or intermittent and direct or by proxy of specific cases of severe abdominal pain, the writer has been many times impressed with, and justified in, the importance of following them to their logical conclusions without regard to temporary amelioration or remission of symptoms and signs. In the case reported except for fifteen minutes two days after the acute severe attack the patient was relatively comfortable for nine days between the attack and operation. Frank surprise and chagrin were felt upon opening the stomach to find the cavity presumably empty and the stomach walls negative. However, cases are recorded in which the bezoars were overlooked entirely at the primary operation and subsequently removed at a secondary procedure. In one case the patient had denied before the primary operation that he had eaten persimmons and recalled the fact afterward. A secondary operation successfully accomplished the removal of the bezoars.

DISCUSSION

Bezoars may escape from the stomach and cause intestinal obstruction. Massage for two weeks over the stomach region in a boy fourteen years of age resulted in elimination by the rectum of bezoar constituents. The field of usefulness

of this treatment depends upon an accurate diagnosis, because the presence of associated organic lesions of the stomach would make it extremely hazardous. In addition massage could scarcely be applied effectively over the stomach to any one but a lean individual. It is clear then that in a few cases bezoars have been removed by other than surgical means. Probably some cases which have been diagnosed as inoperable tumors of the stomach have experienced a spontaneous passage of one or multiple bezoars and been hailed as miraculous cures. Until, however, some safe solvent for the cementum of bezoars shall have proved successful, the accepted treatment is surgical. An exploratory operation is indicated in any case of intragastric tumor which is not clear beyond the shadow of a doubt. Exploration must be thorough. To this end the parietal abdominal wound should admit the hand and unless one is entirely sure of the number and that the size of the bezoars is small the parietal stomach wound likewise should admit the whole hand. Hart² in 1923 prepared the following table of differential diagnosis to which very little has been added from subsequent experience.

A. Trichobezoar

1. Female, with long hair; may get history of hair chewing or swallowing.
2. May crepitate.
3. Hair sometimes vomited, or may be found in the stools.
4. Hair may be found following gastric lavage.
5. Gradual formation.

B. Phytobezoar :

1. Tumor extremely mobile.
2. More common in males.
3. Does not crepitate.
4. Acute gastro-intestinal attack.
5. Rapid formation.
6. History of ingestion of certain fruits or vegetables.
7. May be canalization of barium in hairball and bezoar.
8. Hyperacidity common; may be complicated with ulcer.

C. Carcinoma :

1. Filling defect constant.
2. Hypo-acidity common.
3. Tumor not so freely movable.
4. Emaciation of variable extent.
5. Age.
6. Pain usually on palpation or pressure.

D. Other tumors of the stomach :

1. These show constant defects.
2. Nonmobile.
3. Do not disappear and reappear.

E. Polyps with long pedicle :

1. May get dimpling at point of attachment of pedicle.

On the theory that in a major fraction of cases the diagnosis should be made from the history, this case has been recorded in detail and serves perhaps as the exception which proves the rule. The physical examination was equally disappointing. Even the roentgenologic examination was ambiguous. In extenuation it is frankly admitted that an open mind for all eventualities was not maintained and bezoars were not contemplated. To be sure the organ harboring the pathology was identified and ulcer and malignancy were ruled out. Persimmons as an article of diet were not specifically inquired about nor mentioned by the patient when questioned preoperatively. In the physical examination the obesity of the patient and the relatively small size of the bezoars conspired to frustrate detection by palpation. This circumstance also militated against recognition of the bezoars by the roentgenologist. Incidentally dimpling of the stomach wall at the site of the pedicle of benign tumors is sometimes a point of differentiation. While in some cases the formation of bezoars has seemed to follow promptly the ingestion of persimmons, a few hours to a day or two, the patient in the reported case had been eating persimmons for several weeks before the acute attack of gastro-enteritis. Nothing in the history or the symptoms of fullness and weight in the gastric region pointed definitely to the formation of the bezoars. The alternating diarrhea and constipation obtained before the ingestion of the persimmons and were only aggravated thereafter. Absence of stomach tenderness is characteristic enough, but might equally well occur in benign and malignant tumors of the stomach.

Ulcer of the stomach may be present with, and presumably be caused by, bezoars or the bezoar may be found in the presence of a deep crater of a healed ulcer as mentioned by Smith.⁵ He also reported two cases with acute gastric hemorrhage and without diarrhea. Occult blood has been found in stomach contents and stools without ulcer. In fact gastric hemorrhage, ulcer formation and immobility of the tumor are compatible with the presence of bezoars in the stomach but have led in some cases to a radiologic diagnosis of malignant inoperable tumor.

In conclusion perhaps the main point in diagnosis is to consider the possibility of bezoars, and the important part of treatment is to explore in case of any doubt.

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OIL OF WINTERGREEN POISONING

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Although oil of wintergreen poisoning, long considered rare, is definitely increasing, relatively few cases have found their way into the literature. Because of this and because the toxicity of the drug seems to be poorly appreciated, it might be of interest to report two recent cases as well as to present a summary of some forty-six cases appearing elsewhere.

CASE REPORTS

Case 1. The patient was a female infant, fifteen months of age. She was the seventh child in the family, was born after a normal labor, and weighed seven and one-half pounds at birth. The infant was breast fed until one week before the fatal illness, and had always been considered well and normal. At nine o'clock on the evening of her admittance she had gained access to an amount of methyl salicylate estimated at eight cubic centimeters. It had been left in an ordinary drinking glass by a physician who had prescribed it for external use. A large amount of the oil spilled over her clothing where the odor was distinctly perceptible. A mixture of butter and milk was immediately given to the child at home, and emesis resulted. The parents gave the baby some candy to quiet her, after which she slept. It was soon observed that she was bathed in profuse perspiration, and that she awakened as little "chills" seized her from time to time, but there was no cyanosis.

The patient was admitted to the hospital at ten o'clock, at which time she seemed stuporous. She had several short convulsions and became cyanosed during our attempts to insert a small stomach tube. At 10:15 the pulse was rapid and almost imperceptible. Four minims of epinephrine solu-

tion were given and four grains of chloral hydrate were instilled rectally to control the spasms. Gastric lavage was completed, but the returns were not suggestive of oil of wintergreen. This marked a period of improvement which justified some optimism, but convulsions soon recurred, perspiration was marked, the pulse became extremely rapid and thready, the skin became cyanosed, and in spite of continued stimulation, the baby ceased to breathe. Cardiac action continued for only a few moments longer, and both artificial respiration and intracardiac injection of adrenalin solution failed. The child died approximately two hours and fifteen minutes after ingesting considerably less than eight cubic centimeters of oil of wintergreen, the most rapid fatal course we have been able to find. A curious observation is that almost immediately the entire body became stiff, and rigor mortis was complete within a few minutes after death.

Case 2. The patient was a male infant, sixteen months of age, who was the seventh child of healthy parents. He was apparently a healthy and normal child. He had seized a two ounce bottle of oil of wintergreen from a table when his mother was busy elsewhere. The child came running to his mother, rubbing his face and eye, and crying. A considerable portion of the drug had been spilled over the face and on the clothing, and the bottle which had probably contained one and one-half ounces was empty.

He was admitted to the hospital almost at once, and gastric lavage with a sodium bicarbonate solution, was done. Returns from the stomach consisted of a large amount of cereal, the undigested morning meal, and there was no characteristic odor. One-half of a dram of magnesium sulphate in solution was left in the stomach, and the child was hospitalized. At that time the pulse rate was 130, and respirations were 30. The urinalysis showed a trace of albumin, but this had disappeared by the following day. The pulse slowed, respirations became normal, and the patient was dismissed. A subsequent urinalysis disclosed a two plus sugar content and no acetone, but the urine finally presented a normal picture.

The first of these cases illustrates rather graphically the characteristics of a fatal case of poisoning with methyl salicylate, but the extreme rapidity of death was unusual. Noteworthy among observations made was the sudden rigor mortis, attributed in theory to lactic acid accumulations following the convulsions. The second illustrates the case which ends in recovery after a period of renal disturbance and transient glycosuria. The fact that both of these patients were seen within

*Resident physician, St. Vincent's Hospital.

a few months of each other indicates a possible increase in incidence.

DISCUSSION

Stevenson* believes poisoning with oil of wintergreen is becoming more common, but has reviewed only forty-three cases collected after some search through foreign and American journals. He has, however, added three cases of his own, the most unusual of which was that of a baby one month of age who was given the toxic dose by an imbecile child. The infant took five cubic centimeters, following which it seemed sleepy. The temperature rose to 105 degrees, Kussmaul respirations were present, extreme pallor developed and death occurred at the end of twenty-three hours. An autopsy revealed petechial hemorrhages of the pleura and epicardium as well as edema of the lungs.

Succinctly tabulated, the following observations based on his comprehensive analysis are of interest. The mortality rate averaged 59 per cent; 41 per cent of the cases occurred in infants and the smallest lethal dose was four cubic centimeters. The most rapid death was in ten hours. Symptoms included early and repeated vomiting; and deep rapid respirations with noticeable cyanosis. The breath often had a sweetish odor while the odor of wintergreen and the appearance of sugar characterized the urinary picture. Increased lactic acid and ketones in the blood parallel a decrease in alkaline reserve. Toxic action is believed to be upon the medullary centers, both cardiac and respiratory. The author recommends among the other common measures, administration of intravenous glucose and sodium bicarbonate solution by mouth.

We believe that the above facts bear out our contention that the peculiar rigidity which we observed after the patient's death is characteristic and indicates a high lactic acid content in the blood. Convulsions of a small twitching nature, and generalized as well, are important and render the prognosis grave. Oil of wintergreen is extremely poisonous and because it has a pleasant odor and is so often, almost invariably in fact, dispensed without a poison label, it constitutes a particular hazard in the home with children. A specific recommendation is that all oil of wintergreen dispensed be labeled "poison" and the patients warned of its danger.

Treatment is immediate and thorough lavage. Small amounts of sodium bicarbonate or magnesium sulphate solution may be left in the stomach. If collapse occurs, supportive measures are instituted. If the heart weakens, judicious amounts

of adrenalin solution result in at least temporary improvement. Convulsions may be controlled with chloral hydrate if necessary. After early treatment, the prognosis should be guarded and the full gravity of the situation be realized. The urine should be watched for appearance of albumin or acetone and sugar. Intravenous fluids may be given.

SUMMARY

1. Two cases of oil of wintergreen poisoning are reported, one of which terminated in death.
2. The symptoms of these as well as forty-three other cases are recorded.
3. Death occurred with unprecedented rapidity in the fatal case reported.
4. The drug is extremely toxic and it is recommended that more care be used in prescribing it and that it be plainly marked "poison."

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

INGUINAL HERNIOPLASTY IN THE AGED*

J. W. DULIN, M.D., Iowa City

During the ten years prior to July, 1935, 1,672 patients were operated on at the University Hospital for treatment of inguinal hernia; 301, or eighteen per cent, were over sixty years of age. This represents an unusually high percentage in this age limit in comparison with other reported series. The following discussion is based on a study of this latter group.

In classifying these hernias we find that seventy-five per cent were of the indirect type, ten per cent were of the direct type, five per cent were of the saddle type and seven per cent were recurrent. A small group of cases could not be classified. A sliding type of hernia was present in eleven per cent, a frequency twice that noted below the age of sixty years. Sixty-five per cent of the sliding variety occurred on the left side and most often it was noted in the indirect group. Usually the sigmoid colon was involved. In a few instances the bladder was encountered. Sixty-two of these patients had bilateral hernias and in all but three both sides were repaired. Thirty-eight patients were operated on for strangulated hernia. In this group six deaths followed surgical treatment, four of which were directly attributable to the extensive surgical procedure required at the time of operation. A fifth patient died of pneumonia on

*Stevenson, C. S.: *Am. Jour. Med. Sc.*, xciii:772 (June) 1937.

*From the Department of Surgery.

the fifteenth postoperative day, and the sixth of prostatic obstruction four weeks after hernioplasty.

The most frequent complicating condition present in these patients was prostatic enlargement which was noted in forty-one per cent and was considered the cause of death in three patients. Hypertension of some degree was diagnosed in twenty-seven patients and was probably responsible for one postoperative death.

The Bassini repair was almost routinely used although occasionally minor modifications of this procedure were required, such as the transplantation of fascia lata graft or the reflection of a portion of the rectus sheath when a large defect was encountered.

In the majority of the patients operation was performed under gas anesthesia, supplemented at times with a moderate amount of ether. Local anesthesia was used in eighty instances and spinal anesthesia in ten instances. The debilitated and poorest surgical risks were operated upon under local anesthesia, while the spinal method was used only in those cases where the surgeon was attempting to lessen the technical difficulties. Wound infections occurred in eight per cent of patients when local anesthesia was used, and in only 2.3 per cent of those where operations were done under inhalation or spinal anesthesia. Pulmonary complications were noted in five per cent of the patients operated upon under local anesthesia, and 7.3 per cent of the patients with inhalation anesthesia.

In 263 patients in whom operation was an elective procedure, there were ten deaths. This mortality rate of 3.8 per cent is *seven times as high* as that which occurs in patients under sixty years of age on whom hernioplasties were performed at the University Hospital during the same period. Three of the deaths were due to pulmonary emboli, two were secondary to prostatic obstruction with complications that occur in such conditions, two were from pneumonia, one from cerebral accident, one from cardiac accident, and one due to hemorrhage. The patient who died as a result of hemorrhage had a marked degree of hypertension and his bleeding occurred from a small vessel in the operative site with the subsequent development of a large retroperitoneal hematoma of sufficient size to be fatal. Two patients died within ten days after their discharge from the hospital. One of these patients had a cerebral accident, while the exact cause of death of the other patient could not be ascertained.

Additional important postoperative complications were noted. Eight patients developed pneu-

monia, five suffered varying degrees of pulmonary collapse, three developed pulmonary infarcts, seven showed transitory dementia and three were temporarily incapacitated with phlebitis.

Of this series 151 patients were followed, and in thirty-one, or 20.5 per cent, the hernia recurred. The follow-up on these patients was not undertaken until eighteen months had elapsed after the last operated case. More than three times the number of recurrences were noted in this series as in the series of patients under sixty years of age. Eighteen patients developed recurrences within one year after discharge from the hospital. An analysis of the type of hernia that recurred revealed that thirty-seven per cent of the recurrent hernias again recurred. Since the saddle and direct hernias present essentially the same pathologic problem, they were considered together and it was noted that twenty-six per cent of this group recurred. It was also discovered that the percentage of recurrence was twice as great when local anesthesia was used as when inhalation or spinal anesthesia was employed. In those instances where the operator considered the conditions of the anatomic structures used in the repair as poor there was a recurrence of forty-eight per cent.

CONCLUSIONS

The elective operative repair of inguinal hernia in patients past sixty years of age is a relatively dangerous operation since it carries a mortality rate of nearly four per cent. Also such repair is frequently unsatisfactory since in the present series 20.5 per cent of the patients developed a recurrence of their hernias.

THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

ATRESIA OF THE DUODENUM

E. R. YOUNG, M.D., and
JOHN J. MUELLER, M.D.
Dubuque

Atresia of the duodenum is a rare condition. In the true sense it is an imperforation of the bowel and should not be confused with stenosis. This case which we wish to report is typical in its history, findings, course, and pathology, and may be of some interest.

CASE REPORT

The patient, a white female child five days of age, was admitted to the hospital with a complaint of jaundice, hematemesis, and frequent vomiting. Birth had been normal and the home delivery ex-

ceptionally easy. The parents, twenty-seven and twenty-five years of age, were apparently in perfect health. One other child, five years of age, was also in good health.

The child was jaundiced at birth and weighed seven and three-quarter pounds. About twenty-four hours after delivery the child began retching and a small amount of bright red blood was vomited. The child could retain nothing by mouth following this, although various formulas and barley water feedings were attempted. After the first hematemesis the vomitus was dark and foul and apparently contained some bile. On the third day the child began to be markedly icteric. We believe that no normal bowel movement was ever passed. The meconium that was excreted was foamy and light in color. A nurse gave the child a small enema on the fourth day and reported "good results." Because of the marked jaundice a diagnosis of icterus neonatorum was considered, but the vomiting was not explained on this basis and some bowel obstruction or congenital biliary anomaly was thought likely.

Physical examination revealed an extremely ill moderately jaundiced female infant weighing about seven and one-fourth pounds. The skin was loose and the hands were shriveled. There was evidence of dehydration and loss of weight. The examination was otherwise essentially negative except for a marked distention of the upper abdomen. No peristaltic waves were visible; no mass was palpable. Ten cubic centimeters of paternal blood were given intramuscularly and some one ounce barley water feedings were given by mouth. Some of these feedings were retained. The child's condition, however, rapidly became worse and about a day after entering the hospital she vomited 250 cubic centimeters of blood twice within an hour, and then died.

During the hospital stay there were eight emeses, all but the last two consisting of thick greenish mucoid material. Three simple enemas were given with poor results each time, only small amounts of brownish meconium being expelled. Unfortunately neither the vomitus nor the stools were tested for bile, but it was thought that the former contained bile and the latter did not. Because of the serious condition of the patient an exploratory operation which was considered was not done and the child died before a clinical diagnosis was reached.

Autopsy abstract: The autopsy, done about twelve hours after death, revealed a normally developed white female child. Externally the body showed moderate jaundice and well marked post-mortem lividity over the face and back. The heart, liver, gallbladder and ducts, spleen, pan-

creas, kidneys, ureters, urinary bladder, and genitalia appeared normal. Each lung showed numerous small hemorrhages beneath the pleura and through the parenchyma but were air containing throughout. The stomach was greatly dilated but the pylorus was contracted. Beyond the latter the duodenum formed a bulbous enlargement six centimeters in diameter and seven centimeters in length. Distal to that point the intestine was collapsed and contained only traces of meconium and no bile. The stomach and duodenum were removed together and the anterior walls were opened (Fig. 1). Each viscus contained consid-

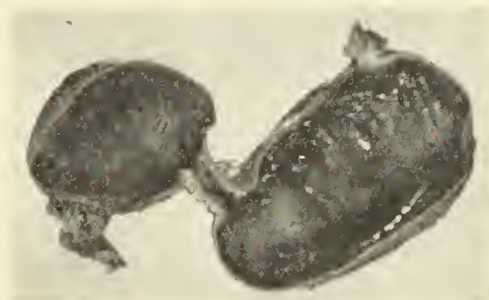


Fig. 1. Photograph of the stomach and duodenum with anterior walls removed.

erable blood and bile stained material. At the most dependent portion of the bulbous enlargement and just distal to the ampulla there was a thinned out membrane with a minute depression in the center. The latter did not admit a fine probe. This membrane was approximately one millimeter in thickness and completely occluded the lumen. An anatomic diagnosis was made of congenital atresia of the duodenum.

GENERAL DISCUSSION

Incidence: Most authors agree that atresia of the intestine occurs approximately once in every 20,000 births. Davis and Poynter⁵ reported a series of 392 cases, of which 134 occurred in the duodenum. Ladd,⁹ in his series of sixty cases, found a very slight predominance in sex incidence of 33 male to 27 female patients. The site of obstruction was in the duodenum 19 times, in the jejunum eight times, in the ileum 27 times, and in more than one site six times. Multiple obstructions were found in about 15 per cent. Bowers and Cook² reported a case of congenital atresia of the sigmoid colon. Seidlin,¹⁵ in 1925, collected all reported cases of congenital intestinal obstruction and determined that duodenal obstruction occurred in a proportion of a little more than one to two, and showed that the duodenum has a peculiar predisposition for congenital atresias. In 1926 Sheldon¹⁶ reported that among 6,000

autopsies performed at the Hospital for Sick Children in London since 1900, there were 26 instances of congenital atresia and stenosis.

Etiology: There has been much debate about the cause of these congenital obstructions. Buchanan³ classified them as intrinsic and extrinsic types. The extrinsic causes are adhesions, bands, torsion or volvulus, and constricting blood vessels. Intrinsic causes are atresia, complete gap in the continuity of the bowel, and a partition in the bowel. Ladd believes that the intrinsic obstructions are probably due to an arrest in development during the transition which the bowel goes through from a solid cord to a hollow tube, and this arrest takes place prior to the twelfth week of fetal life. Tandler¹⁷ has shown in human embryos between thirty and sixty days of age that the duodenum is solid, and suggested a similar explanation for atresia. Kreuter⁸ confirmed this but Schridde¹⁴ denied it. Forssner⁷ believes it due to overdevelopment of the forerunners of the villi. Bland-Sutton¹ thinks that these obstructions occur at the site of an embryologic event, such as the place of attachment of the vitelline duct, and the second portion of the duodenum where the liver and pancreas form. In one out of every ten instances some other significant embryologic defect is present. The most common of these is an imperforate anus.

Pathology: These cases of atresia are peculiar in that the obstruction consists of a diaphragm, or membrane of tissue completely closing the lumen at the point of involvement. Ladd stated that from the reports of postmortem examinations there seemed to be a moderate amount of uniformity in the thickness of the velum causing these obstructions, and in its situation between the second and third portions of the duodenum. Wangenstein¹⁸ wrote that a photograph of the connecting structure shows it is composed altogether of fibrous tissue. Sheldon reported a case in which microscopic section through the connecting band showed all the normal intestinal layers to be present with the mucosa completely fused. Fifty-nine of the 134 cases of duodenal atresia collected by Davis and Poynter occurred above the papilla of Vater and 75 below it. Cordes⁴ found twenty cases above the papilla, thirteen below, and two at the level of the duct in a series of 57. The others were not classified. The degree of constriction may vary from stenosis to complete obstruction. The cases of atresia are completely obstructed. Hypertrophy of the intestinal wall above the obstruction occurs regularly. The bowel is usually distended above the obstruction, in some instances so markedly that the pyloric ring is obliterated, or rupture of the bowel may occur.

The bowel is collapsed and thread-like below the obstruction with a patent lumen in the majority of cases. Bile may be present in the lower bowel in instances in which the obstruction is below the papilla of Vater. This occurrence has been explained either on the basis of an anomalous bile duct opening below the obstruction, or the development of the atresia after the fifth fetal month at which time bile is normally present in the intestine. Absence of a segment of bowel has been reported frequently. Wangenstein observed a case in which there was not only interruption in the continuity, but almost complete absence of the mesentery.

Diagnosis: The infant begins to vomit very early, usually within the first twenty-four hours. The vomiting is expulsive in type and may or may not contain bile. This is the most important and outstanding symptom. Amniotic fluid, or blood, or "coffee-ground material" may be found in the vomitus. This is to be considered pathognomonic of duodenal atresia or stenosis. Ladd believes that vomiting in the newborn, in the absence of cerebral injury or infection, should suggest malformation in the alimentary tract. In a very short time the infant becomes dehydrated, the fontanelles are depressed, the color becomes cyanotic and the temperature is raised. The baby either loses weight rapidly or fails to gain under the best supportive treatment. When the vomiting has been severe, signs of alkalosis may be manifested by tetany and convulsions. Bowel movements are restricted and, while normal meconium may be obtained, complete obstipation and absence of milk stools is the rule. Jaundice may or may not appear within the first few days. In view of the fact that jaundice is so frequently seen in infants this must not be considered a significant finding.

Physical examination reveals a puny, cyanotic and evidently dehydrated infant. There is a peculiar distention of the upper abdomen in duodenal occlusion. The stomach and proximal portion of the duodenum are markedly distended and the bowel below the obstruction is flat and collapsed. This gives a definite, marked bulging of the epigastrium and a flattened, comparatively depressed lower abdomen. In the majority of instances peristaltic waves are visible passing from left to right. The distended stomach and duodenum are easily felt and outlined in the epigastrium, but no firm mass can be found. Farber⁶ stressed the fact that normal meconium contains cornified epithelial cells (swallowed vernix caseosa) in large numbers. He developed a special technic to demonstrate them. The absence of these cells in the smear is proof of atresia of the intestine. All

authors agree that x-ray pictures are a definite aid in establishing the diagnosis. A plain picture should be taken first, and if barium is needed to localize the lesion accurately a very thin mixture should be used. Both Montgomery¹⁰ and Ladd agree that the administration of barium in the face of an obstruction has some hazards, and may prove disadvantageous at operation. Morton and Jones,¹² who reported eleven successful operations, believe that the information gained by the use of barium offsets its disadvantages.

Differential diagnosis: Congenital pyloric stenosis is the main condition to exclude in the diagnosis. It is not manifest usually until two or three weeks after birth, and a mass is palpable in over 50 per cent of the cases. Only gastric contents are vomited and it affects the male infant fifty times more frequently than the female.

Prognosis: The prognosis is extremely poor. In 349 published articles there are reports of twenty-nine cured cases; in fifteen the obstruction was due to malrotation, and in fourteen to intrinsic atresia or stenosis. In Ladd's series of sixty cases there were twenty with obstruction due to malrotation. Of these only nine recovered, giving a mortality rate of 55 per cent. Eight of the forty cases with intrinsic obstruction recovered, a mortality rate of 80 per cent. The total mortality rate for the entire series was 71.6 per cent. Morton and Jones, however, in 1936 reported a series of eleven successfully treated cases.

Treatment: The pathology is that of bowel obstruction, and the only treatment is operative. It is impossible to know beforehand whether the cause of the obstruction is intrinsic or extrinsic, and the surgeon must not enter the abdomen with any definite plan. Duodenojejunostomy has been the operation of choice in most instances of atresia. Morton proposed a technic by which the obstructing diaphragm in atresia is destroyed by cautery through a longitudinal incision in the gut; the wound is closed transversely. His favorable results seem to indicate that this is the best procedure in properly selected cases. Enterostomy is advised against by most men although one successful cure is reported.¹¹ Ether is the anesthetic of choice. Preoperative care is extremely important. Dehydration must be overcome by the use of parenteral glucose, Hartmann's solution, and small blood transfusions. Rose and May¹³ made a rule not to gavage an infant under two weeks of age with a history of vomiting from birth unless intestinal obstruction is definitely ruled out.

SUMMARY

1. A case of duodenal atresia is reported and discussed. The condition is apparently rare, but probably occurs more frequently than is usually believed.

2. Vomiting is the most important symptom. Blood or amniotic fluid in the vomitus is to be considered pathognomonic of duodenal obstruction.

3. Farber's technic for examining meconium smears is simple, and the procedure is generally well recommended.

4. Roentgen ray examination with or without the use of barium is a great aid in confirming and refining the diagnosis.

5. The prognosis is poor; surgical intervention offers the only hope. Preoperative care is extremely important.

6. The technical procedure of the operation is a serious problem. The obstruction may be either extrinsic or intrinsic (as in our case) and the method used to overcome it will depend on the judgment of the surgeon at the time of operation.

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STATE DEPARTMENT OF HEALTH

Walter Diering

Typhoid Carriers Spread Typhoid Fever

The great majority of the typhoid fever cases reported in Iowa during recent years have been of sporadic rather than epidemic nature. Moreover, most of the cases are traceable directly to typhoid carriers. It is estimated that at least two per cent of typhoid fever patients develop a carrier condition and continue to harbor typhoid organisms, usually in the gallbladder, throughout the remainder of life. While ordinarily free from symptoms themselves, carriers

FIG. 1. CHRONOLOGY OF THREE TYPHOID CARRIERS—FAYETTE COUNTY, IOWA

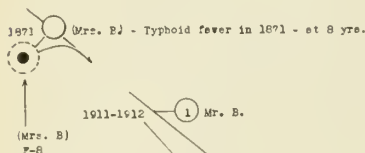
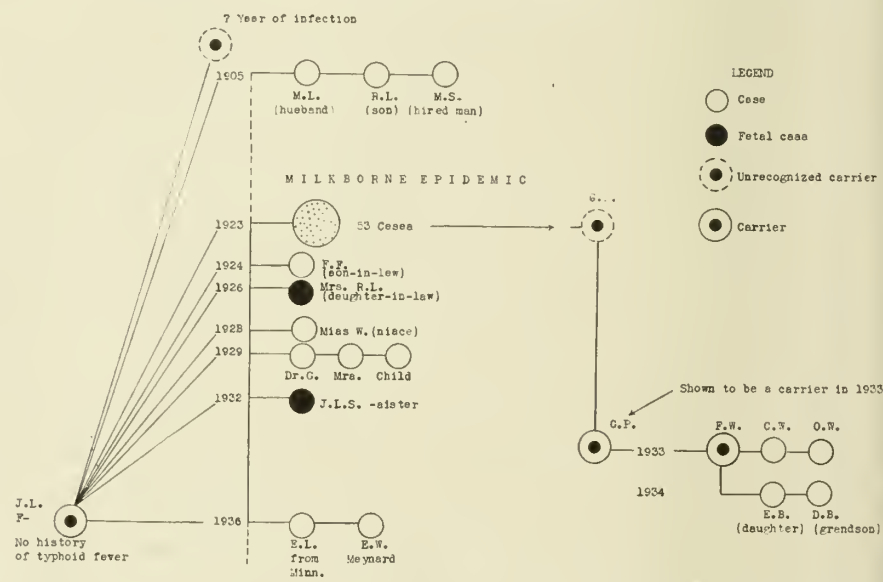


FIG. 2. TYPHOID CARRIER AND TYPHOID FEVER—BLACK HAWK COUNTY, IOWA

discharge typhoid germs and through contamination of food, milk or water, may be the source of prolonged or fatal illness in one or more members of their family or associates.

The spread of typhoid fever from a single source, the typhoid carrier, is illustrated in the accompanying diagrams.

Figure 1 shows graphically the sequence of events in the career of carrier J. L. of Fayette county. This carrier insists that she never had typhoid fever. In 1905, her husband, son, and hired man developed typhoid fever. The hus-

band died, the son recovered, the hired man returned to his home and his entire family contracted the disease. In 1923 at Oelwein, a milk-borne epidemic with 53 cases of typhoid fever was stopped abruptly by pasteurization of milk from a dairy which distributed milk from this carrier's farm. In 1924, a son-in-law of J. L. developed typhoid fever while visiting her. In 1926, her daughter-in-law died of typhoid fever six weeks after coming to her home. In 1928, J. L.'s niece visited her and acquired typhoid fever. In 1929, a family

of three, living next door to and procuring milk from J. L., developed typhoid fever. In 1932, a sister from California acquired typhoid fever at the home of J. L. and died one month later.

In 1933, (see Figure 1), G. P., who had typhoid fever during the Oelwein epidemic in 1923, was shown to be a carrier after having caused the illness of a sister, niece, and nephew. The sister, F. W., in turn, proved to be a carrier in 1934, having been the source of infection of typhoid fever affecting her grandson.

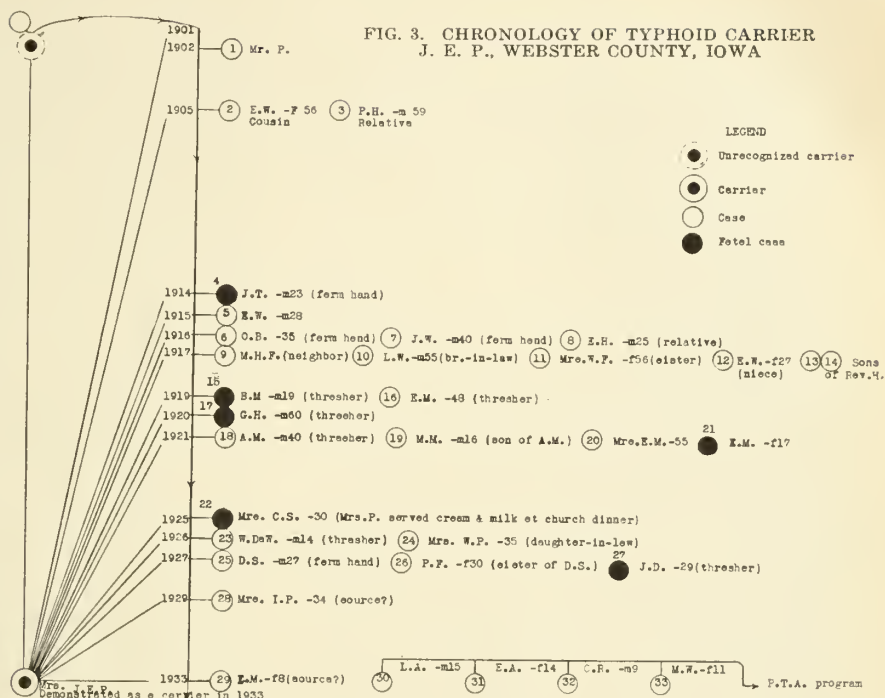
To return to J. L. (refer to Figure 1), a grandson and a nephew visited her in 1936 and developed typhoid fever. It was at this time that typhoid bacilli were isolated from three fecal specimens and J. L. was shown to be a typhoid carrier.

Cases of typhoid fever, listed in chronologic order and derived from the same source (Mrs. B.) are indicated in Figure 2. The woman concerned was born in 1863, had typhoid fever in 1871 and was found to be a carrier sixty-two years later, in 1933. During this period covering most of a life time, Mrs. B. was the probable source of sixteen known cases of typhoid fever, two of which were fatal.

Figure 3 illustrates in similar manner the chronology of fifty-three cases of typhoid fever with six fatalities, which were traceable to Mrs. J. E. P. of Webster county. The carrier state was discovered in 1934.

Regulations of the State Department of Health state that cases of typhoid fever shall not be released until free from infection, and shall not be

FIG. 3. CHRONOLOGY OF TYPHOID CARRIER
J. E. P., WEBSTER COUNTY, IOWA



considered free from infection until laboratory examination of two specimens each, of feces and urine, collected not less than twenty-four hours apart, show absence of the infecting organisms. Faithful carrying out of arrangements for release specimens on all typhoid patients during the period of convalescence, would lead to early discovery of a typhoid carrier state and limit very definitely the further spread of typhoid fever.

FIRST CASE OF SPOTTED FEVER REPORTED

On May 25, a probable case of Rocky Mountain spotted fever was reported to the Iowa State Department of Health by Gage C. Moore, M.D., of Ottumwa. The patient, fifty-four years of age, is a farmer, the farm being in Wapello county, a number of miles south of Ottumwa. Onset of illness occurred May 16; chief complaints were of sore throat and weakness. Following admission to the hospital on May 22, an engorged tick was removed from the patient's leg. He had a chill on his first day in the hospital, and there has been daily elevation of temperature, the highest reading being 103.2 degrees. A macular rash, which appeared on wrists and ankles on May 24, was becoming generalized when seen by the attending physician and a representative of the State Department of Health on May 27. The patient was somewhat drowsy. The Weil-Felix agglutination reaction on a serum specimen taken May 22, was reported negative by the State Hygienic Laboratory at Iowa City. A second blood specimen was

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII JUNE, 1938 No. 6

THE ANNUAL SESSION IN RETROSPECT

The Eighty-seventh Annual Session of the Iowa State Medical Society has come and gone. It was the culmination of months of time, thought and effort on the part of many officers and members of the organization, and it was the consensus of all in attendance that the 1938 session was highly successful from every point of view. Space does not permit individual mention of those physicians who labored so industriously in assisting Dr. Edward M. Myers to conduct this enjoyable and profitable state meeting. However, the JOURNAL wishes to take this opportunity to congratulate each and every doctor who participated in the event, and to thank them for presenting this session to the members of the Iowa State Medical Society.

A few high lights of the meeting deserve special attention. This year's registration set a new record for attendance with a total registration of 1,122, composed of 804 Iowa physician members, 116 out of the state physicians and guests, 52 exhibitors and 150 members of the Woman's Auxiliary. This year also marked the inauguration of a Doctors' Hobby Exhibit, and judging from the number of exhibits, the excellence of the specimens on display, and the large groups which visited the show, this venture was a definite success. We are sure that next year when the call goes out for hobby exhibits there will be many responses. The scientific exhibits maintained their previous high standards of merit and an interested group of physicians could always be viewed in the exhibit room. A new feature, which proved to be very popular, was the full two day showing of motion pictures depicting various technical procedures of interest to physicians and surgeons. We predict that this, too, will be made a permanent

part of the annual session program. Mention should be made of the fact that the State Society this year entertained the largest number of commercial exhibitors which it has been our pleasure to have for many years. This is an important item when one considers the part these commercial houses play in making possible our state meetings. It is to be hoped that our members will continue their practice of visiting the exhibits and evidencing genuine interest in the new products each firm has to offer.

The July issue of the JOURNAL will carry a full report of the transactions of the House of Delegates, and for that reason detailed information will not be presented at this time. One of the most important steps was the adoption of a resolution pertaining to the approval of substitute dairy products by the Committee on Foods of the American Medical Association. An editorial on this subject will be found elsewhere in this issue, and every member is urged to read it, so that he will become fully acquainted with the problem. That section of the Constitution and By-Laws of the Iowa State Medical Society which relates to the duties and activities of the Medicolegal Committee was revised to preclude any charges of the society engaging in the practice of law. The Executive Committee, established last year to act as a governing body during the interim of meetings of the House of Delegates, was given authority to continue in that capacity until May, 1939, at which time the permanency of the committee will be decided by a constitutional amendment.

This review has been necessarily brief. We wish it were possible to show by printed word that atmosphere of good fellowship and friendliness which was present during the entire session. The French have named it "esprit de corps," the American expression is "team spirit"; but whatever it is called, its presence is gratifying and stimulating. It implies as nothing else does, the sympathy, enthusiasm, devotion and jealous regard for the honor of the body as a whole, which should be, and is, so characteristic of the medical profession.

COUNCIL ACCEPTANCE OF SYNTHETIC DAIRY PRODUCTS

Now and then a situation arises in which an unintentional and undesirable injustice is perpetrated. A case in point is the "acceptance," by the Committee on Foods of the American Medical Association, of substitutes for natural dairy products, of which oleomargarine is the chief example; while natural dairy products, like butter, are not "accepted." Manufacturers of butter substitutes have been quick to take advantage of this opening, and have prominently displayed the "seal of ac-

ceptance" of the American Medical Association in the advertisements of their products, leaving the reader to infer that the physicians of America consider oleomargarine superior to butter.

We are sure the physicians of America do not believe anything of the kind. Nor do we believe they want to appear to the dairy interests of the country to be approving synthetic dairy products over natural dairy products. Just why the Committee on Foods should grant its seal of acceptance to oleomargarine and withhold it from butter is not clear to us. Presumably some good reason exists; but whatever it is, a policy which permits the medical profession to be put in such a false position, and which permits unfair advantage to be taken of producers of natural dairy products, should be corrected. We are, therefore, in full sympathy with the following resolution adopted by the House of Delegates of the Iowa State Medical Society on May 13.

Whereas, One of the main objectives of the Committee on Foods of the American Medical Association is for improvement in the nature of advertising; and

Whereas, The Committee on Foods has changed its policy and no longer considers and "accepts" butter and other natural dairy products; and

Whereas, Since discontinuing its acceptance of butter it has given its seal of acceptance to substitute products, such as oleomargarine sold under trade names; and

Whereas, This policy of the Committee on Foods has encouraged commercial firms to advertise such products as being accepted by the Committee on Foods, used by the medical profession and approved by the medical profession at large; and

Whereas, This policy of the Committee is bringing much criticism on the profession at large from the dairy interests of the country; and

Whereas, The medical profession has always advocated the liberal use of natural dairy products in the interest of public health; and

Whereas, The profession at large does not want to be held responsible for a policy which discriminates against the natural dairy products in favor of the margarine class of products; therefore

Be It Resolved, By the House of Delegates of the American Medical Association, that the Committee on Foods be requested to change its policy in such manner as will eliminate this basis for warranted and undesirable criticism of the medical profession and of the American Medical Association; and

Be It Resolved, That the delegates of the Iowa State Medical Society be instructed to present this action to the House of Delegates of the American

Medical Association at the annual meeting in San Francisco in June, 1938.

THE SEDIMENTATION TEST

One of the newer tests which seems to have survived the critical period of experimentation and to have emerged as a test of definite clinical value within certain limitations, is the sedimentation rate of the red blood cells.

This laboratory procedure is one of ancient history, but was established by Fahraeus¹ in 1918, and has since been refuted and lauded in many publications on this subject. The sedimentation test is a simple procedure in which the fall of cells is measured in a vertical column of blood to which an anticoagulant has been added. The great majority of these tests in use today are modifications of two procedures using this primarily simple principle. Thus the technics may be divided into those which measure the fall of blood in a given time, usually one hour (Westergren and Cutler); or those which utilize the opposite principle, the time necessary for the column to fall a given distance, usually eighteen millimeters (Linzenmeier). Regardless of which test is used the results in normal subjects appear to be reasonably concordant. A number of factors have been shown to cause variation in the suspension stability of erythrocytes, such as variation in the technic of measuring the sedimentation rate, variation in the erythrocyte concentration and size, and variation in the constituents of the plasma or serum, but a consideration of these factors is beyond the scope of this brief editorial.

The sedimentation rate is a nonspecific reaction which may be accelerated by almost any process which causes increased tissue break down or injury. The process may be infectious, toxic, metabolic, neoplastic, or mechanical. Pregnancy is the only physiologic process which is accompanied by a rapid sedimentation rate, and if this is ruled out a rapid rate is otherwise found chiefly in infectious diseases and in malignancy, although fractures, aseptic wounds, burns, lead and arsenic poisoning and thyrotoxicosis are also capable of increasing the rate. Obviously, therefore, the sedimentation test is of little or no value in the differentiation of diseases; nor is it of diagnostic value in the study of patients who have fever or leukocytosis or who present other adequate signs of pathology. In such instances it merely yields additional confirmatory evidence that the patient is sick. The more important fields of usefulness for the test are in the routine check-up of patients where an increased rate is indicative of the presence of some kind of disease; in the differentiation

of functional from organic disease, particularly in cases of suspected neurosis where the obtaining of a normal rate would be confirmatory evidence that the symptoms were of a psychogenic character; as a guide in the treatment of chronic infectious diseases; as an aid in differentiating malignant from benign tumors; and as a means for possible early detection of metastasis in previously operated malignant lesions.

The literature contains many references illustrating the usefulness of the sedimentation test. Cutler² used this test as part of his routine examination on 1,000 apparently healthy or slightly complaining patients. The rate was abnormal in 177. Further study revealed that of these, 96 had basal, non-tuberculous infiltration of the lungs, 32 had latent apical tuberculosis, 35 had positive Wassermann reactions, five had pelvic inflammatory diseases, and one had carcinoma of the lung.

Wood³ has compiled some interesting data on a group of 164 patients with heart disease. He noted an increase in the sedimentation rate with acute rheumatic carditis, syphilitic aortitis, myocardial infarction, infectious endocarditis, malignant hypertension, and pulmonary infarction. There was a normal sedimentation rate in inactive rheumatic carditis, atherosclerosis, and in mild thyrotoxicosis. He noted a retarded sedimentation rate in congestive heart failure, and in states in which there is a marked cyanosis.

In the same line of thought, Shookhoff and Rabinowitz⁴ reported a series of twenty-nine patients with acute cardiac infarction. Nine of these twenty-nine patients died and of the five in whom autopsies were performed, acute thrombi were found. These authors report that the sedimentation rate was increased in all cases of acute cardiac infarction. The most marked increase occurred between the second and fifth day with a return to normal in from thirteen to thirty-six days.

Hoffman⁵ reported sixteen cases of coronary thrombosis and found an increase in the sedimentation rate in every one. He concluded that a return of the rate to normal usually indicated healing although this was not uniformly true in his experience. He likewise felt that the sedimentation rate is of diagnostic and prognostic value if taken in conjunction with other findings.

In cases of rheumatic fever and tuberculosis the sedimentation test has been found to be more valuable than any previously known test for determining that time when the disease process has completely subsided. Since it is generally admitted that prolonged bed rest is indicated in both of these conditions as long as activity persists, it follows that patients with these conditions should

be kept in bed until the sedimentation rate has returned to normal.

Undoubtedly the sedimentation test can be of a great deal of help in studying patients with suspected malignancy. Most authors are agreed that the rate is increased in malignant growths and is normal in benign ones. On this point we may quote from Bannick, Gregg and Guernsey:⁶ "It (the sedimentation rate) may aid in distinguishing benign from malignant conditions, but the test must not be relied on too much in this regard. We have seen patients who had carcinomas of various types and sizes, and who even had regional and distant metastasis whose sedimentation rate was perfectly normal. Usually, however, the sedimentation rate is increased in the presence of malignant conditions, particularly when the lesion is of the ulcerating type." Therefore, when the physician is trying to decide whether a given lesion is benign or malignant, an increased sedimentation rate is a point in favor of malignancy providing other causes for the increased rate can be excluded. However, a normal sedimentation rate under such conditions does not exclude malignancy. Lymphoblastomas and sarcomas usually are associated with an increased sedimentation rate just as are carcinomas.

Regarding the sedimentation rate then, it seems to us that the conclusions of Cutler, Herr and Park⁷ are justifiable. These authors state:

1. It is nonspecific and an increased rate occurs in many diseases characterized by disturbed stability of the blood.
2. It has distinct value as a diagnostic lead in indicating the presence of serious disease not infrequently before the disease can be recognized by the usual clinical and laboratory methods.
3. It also has value in diagnosis in a qualitative sense by indicating the intensity of the disease.
4. It is of value in prognosis and as a guide to treatment because it reflects the general condition of the patient.
5. The technic is simple and will give reliable results under average conditions.

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A PRESCRIPTION FOR THE DOCTOR

A consideration of the causes of physicians' deaths listed in the *JOURNAL* of the Iowa State Medical Society and the *Journal* of the American Medical Association prompts the individual physician to serious thinking. The high incidence of coronary artery disease among the medical profession is generally recognized, and this fact is substantiated by accurate statistics in the previously mentioned publications.

Dr. Harry L. Smith of The Mayo Clinic presents some very interesting data on the incidence of coronary sclerosis among various occupational groups. Picked at random from the clinic files were the case records of three hundred physicians, and a similar number of records of bankers, lawyers, clergymen, laborers and farmers. Out of the group of eighteen hundred patients, the greatest incidence of coronary sclerosis occurred among the physicians (10.7 per cent). This rate was four times as great among physicians as it was among laborers and farmers, and about twice as great among bankers, lawyers and clergymen as it was among laborers and farmers. This high incidence among physicians may be attributed to several causes. The long period of preliminary training is exacting; it entails long hours of study and the expenditure of considerable emotional energy. The strenuous life of the busy physician calls for physical abuse and a nervous tension which is inevitable from the very nature of his work. There are others who in a spirit of martyrdom seem to enjoy abusing their bodies and disobeying all rules of health or dictates of judgment.

Perhaps one of the greatest criticisms of the average individual physician is that he has become so engrossed in the practice of medicine that he has forgotten how to play; he possesses no hobby and he denies his family the pleasure and benefit of his companionship. The adage that "all work and no play makes Jack a dull boy" is particularly applicable to the physician. At this time of the year the majority of people, irrespective of their occupations or positions in life, are planning vacations. One wonders, however, how many doctors have realized the necessity of such relaxation for themselves.

Despite incessant demands and the responsibility of sick patients, the doctor, if he is wise, will take time to play, to obtain reasonable exercise, to have a hobby. In so doing he will neither jeopardize his practice nor neglect his patients; he will find life much richer and may in some measure defer for a decade the changes in his coronary arteries.

THE STUDY OF MEDICAL CARE*

The House of Delegates of the Iowa State Medical Society authorized the Medical Economics Committee, with the aid of the councilors, deputy councilors and secretaries, to proceed with the study of the supply and need of medical care as outlined by the American Medical Association. This work should be started as quickly as possible in every county, since the whole study will take a considerable amount of time and should be completed with the utmost speed consistent with accuracy and completeness. In the near future a supply of blanks will be sent from the central office to each county secretary. These should be studied carefully by the committee in charge of the survey.

There are nine questionnaires, to be filled out by nine different individuals or agencies which have to do with health and medical services in the various communities. The committee will pick out the blanks which are required in the county, and will distribute them to the individuals who are best able to fill them out, with the request that the blank be returned to the county secretary when completed. It is requested that as far as possible, accurate figures be given in answer to every question, and that if estimates are necessary they be marked as estimates. The committee in each county, if it feels the need of further information, is to feel free to call on the councilor of the district or any member of the Medical Economics Committee of the State Society for assistance. It is further urged that the county society secretaries read carefully, and give to the appropriate committee the information on the conduct of the study which is being sent from the American Medical Association. It is essential that, insofar as possible, blanks be filled out by every doctor in the county, non-members as well as members.

In answering the first two questions on the physicians' blanks, it will often be found almost impossible to collect the data requested for the year 1937. Many doctors do not keep their records in such a manner that they could separate the patients they took care of for relief agencies from those for whom they received part pay. We would suggest that each doctor keep an accurate count, for sixty or ninety days, of the number of cases of each type which he sees. From this information it will be possible to arrive at a fair estimate of the total number during a twelve months' period. Any other statistics which are not available can be secured in the same fashion, and this will be much more ac-

* Prepared by the Medical Economics Committee.

curate than trying to estimate the number in the preceding year. The rural counties, with few agencies to deal with, and with no large industrial firms to study, will find that the individual physician's and dentist's records, the hospital blanks, and those of the relief forces will be the only ones which apply to their local situations. In the urban counties, it will be necessary to study a great many different agencies, and this work should be done under the supervision of the doctors who are best acquainted with the work done in each place.

The most important part of the study, and that which will require the most individual as well as committee study, is that dealing with the inadequacies of medical care where they exist. It is earnestly hoped that each physician, and each agency studied, will make a serious effort to collect all available statistics regarding those cases which have not received adequate care, the reason for the lack of care, and methods which might be used to prevent the recurrence of such inadequacies. Any recommendations which may be made as a result of this study will be formulated from this information. In the final analysis the real purpose of the study is to determine if and where there exists any inadequacy in medical supply, whether that inadequacy is in the personnel or in the availability of medical care, and what steps may be taken to relieve any situations which may be found.

THE CANCER MANUAL

At the recent session of the House of Delegates, there was some discussion in regard to the financing of the Cancer Manual which had been sent to every physician in Iowa by the Executive Cancer Committee. The committee had believed that enough members would be willing to contribute \$1.00 to defray the necessary expense which was approximately \$1,000. At the time of the meeting only 208 members had done so, and the committee still owed the publisher nearly \$800. It was the consensus of the members of the House of Delegates, that with some stimulating reminder, many men who intended to, but who had forgotten to contribute, would do so. Therefore, the committee takes this method of reminding members of the Iowa State Medical Society that their contributions will be gladly accepted.

While it is true that a layman interested in cancer control in Iowa, has offered to defray the expense, or that if necessary the members of the committee will do so, we do not believe that the rank and file of the Iowa State Medical Society

desire that this should be done. The committee therefore suggests, that all members desiring to do so will send their dollar to the publisher, The Athens Press in Iowa City, Iowa, or to Dr. F. P. McNamara in Dubuque, Iowa.

* * * *

The JOURNAL gladly publishes the above communication from Dr. McNamara, chairman of the Cancer Committee, because it believes the work of the committee, in compiling and publishing the Cancer Manual, is an outstanding accomplishment and one which deserves full recognition from the membership of the Iowa State Medical Society. Certainly every physician who reads this compact volume will be benefited many times the small sum asked by the committee to help defray the expense of publication. The Book Review section of this issue carries a review of the manual. So far as we are aware no other single publication exists in which available knowledge about cancer of all parts of the body has been assembled as in this work.

Too frequently, we surmise, the work of our committees is taken for granted, and the many hours of effort necessary to accomplish objectives, freely and willingly donated, often at a real sacrifice, fail to receive the recognition they should. This specific accomplishment of the Cancer Committee serves to bring sharply to our attention the debt of gratitude we owe, not only to this committee, but also to the many others, whose work and achievements, while not so readily discernible are, nevertheless, equally valuable. Let us give credit where it is due, and let us show our appreciation of a committee's fine work by a quick over subscription to the debt it has incurred in our behalf.

XII. INSTRUCTIONS TO PATIENTS*

Explain to the patient that the heart failed because it was forced to carry an excessive load. Hence it is necessary to reduce the mental or physical effort to a point where the crippled heart will not be overtaxed. The patient must be warned never to continue work in the hope of getting his "second wind," but must immediately stop the activity which brought on the dyspnea. The damaged heart must at all times be given "the breaks" during the rest of his life. The instructions given under prophylaxis apply with double significance after one bout with congestive

* Editors Note: This is the last article in this series of editorials prepared by Dr. Daniel J. Glomset on modern cardiac therapy. The complete set will be found in issues of the Journal from July, 1937, to June, 1938.

heart failure and it would be very prudent to set aside an occasional day for absolute bed rest.

Perhaps the most important precaution the patient can take for the prolongation of life, is to return to his physician at frequent intervals so that he may keep in touch with the condition of the patient. As soon as the clinician detects the slightest evidence of recurring failure, the individual must be instructed to curtail his activity. He may now start to take xanthine diuretics, one a week, as suggested by Harrison.

Xanthine Diuretics: There are many efficient xanthine diuretics available. These drugs apparently act by keeping the glomerular loops open. By this action glomerular filtration is increased. With this class of patients there is ample time to give each preparation a trial in order to discover the most suitable one. The physician who has no preference may try these drugs in the order given below.

1. *Aminophylline* (theophylline with ethylene diamine U.S.P. XI) 0.20 gram (three grains) three times a day, taken orally; or 0.24 gram (four grains) in a ten cubic centimeter ampule form, administered intravenously, once a day. (When the xanthines are given orally they should be dissolved in hot water.)
2. *Theocin* (theophylline sodium acetate) 0.20 gram (three grains) four times a day.
3. *Phyllicin* (theophylline calcium salicylate) 0.20 gram (three grains) four times a day.
4. *Theocalcin* (theobromine sodium salicylate) one gram (fifteen grains) four times a day.

All of these should be administered on two successive days each week. The dose is large enough if some gastric irritation follows the last dose. The patient is instructed to maintain a stationary fluid intake for two days previous to, during, and two days following, the administration, and also to measure the twenty-four hour output of urine during those same six days. In this way accurate information on the efficiency of each preparation is obtained.

Mercurial Diuretics: In spite of the digitalis administered and the careful living which is practiced by the cardiac cripple, the time comes when edema once more appears. At this time the patient's activity must be reduced still further, and now the mercurial diuretics are added to the therapeutic regimen. The best of the recent mercurial diuretics is salyrgan, which is available in ampule form, each containing 0.1 gram (one and one-half grains); and in suppository form containing 0.4 gram. Another such suppository

has the name of mercurin and this contains 0.5 gram of the drug. The mercurial diuretics act by tending to precipitate the protein framework of the tubular cells. Their action is so mild that salyrgan has been employed over a thousand times in one patient without producing any permanent kidney injury. The action of the mercurial diuretics hinders reabsorption through the tubules, so that more water is eliminated. The suppository as well as the intravenous form of these drugs, is best given only once a week. It seems most logical to begin by using the suppositories. Since they frequently irritate the rectum, their continuous use is not advisable. Therefore, one must rely, to a great extent, on the intravenous administration of salyrgan. It should be given as follows: draw the contents of one ampule into a ten or fifteen cubic centimeter syringe, fill the barrel with sterile salt solution, and inject into a suitable vein. Diluting the mercury eliminates the necrotizing effect and lessens the danger of a spill. These drugs control cardiac edema for long periods, but there comes a time when even these must be reinforced, and it is in this period that the rather nasty, so-called acid diuretics should be tried.

Acid Diuretics: The acid diuretics are ammonium chloride and ammonium nitrate, and are best given three or four times a day in doses of two grams (thirty grains). These drugs are on the market in enteric-coated tablets, and are supposed to produce diuresis by decreasing the alkalinity of the blood. However, they probably act as do the mercurial diuretics, by preventing reabsorption from the tubules. They are not well tolerated by most patients, and are best held in reserve until this stage of the disease. They are given on the two days prior to the weekly administration of salyrgan. My own notion is that fifty grams or more of glucose, is every bit as efficient and more pleasant to take.

Finally years, and perhaps decades, after the first break of compensation, the time comes when in spite of everything, edema accumulates. The patient is, by this time, very ill, has difficulty in breathing, and must be kept in bed. Even at such times, a marked diuresis may suddenly take place, and the patient may be able to continue for months before the exitus. Any time toward the last, the patient, who was fairly well when he or she went to sleep, may awaken suddenly at night gasping for breath because of an attack of the so-called cardiac asthma. This is a bad omen. The best treatment for cardiac asthma is a hypodermic of morphine. There are those who advocate aminophylline intravenously, and claim

very good results from its use. I can see no harm in trying it after the morphia has been given.

When in spite of bed rest and the employment of the various diuretics, distressing amounts of fluid accumulate in the body cavities or in the tissues, tapping must be resorted to, and it is surprising how long a person may be kept alive by paracentesis. It is not necessary to employ Southey's tubes. If the wound is covered with a sterile dressing, it will drain abundantly for long periods at a time, and the danger of infection is not nearly as great as when tubes are employed. Dressings kept on the paracentesis wound will allow large quantities of fluid to escape. In the last miserable chapter of such a cardiac sufferer's life, morphia is the only drug which will give the patient relief, and he who administers it niggardly is indeed a cruel doctor.

PRIZES AWARDED IOWA GOLFERS

The Iowa State Medical Golfing Association announces the following results of the Fourth Annual Tournament, held in Des Moines, Tuesday, May 10: Dr. B. J. Moon of Cedar Rapids, with the lowest gross score, was awarded the Mead Johnson and Company silver trophy; Dr. J. S. Deering, of Onawa, with the second lowest score, received a physician's bag, donated by the United States Hospital Supply Company of Davenport; and Dr. J. C. Donahue of Centerville, was given a smoking stand by Koch Brothers of Des Moines. Additional prizes were awarded as follows: Dr. R. W. Tandy of Morning Sun, a thermometer set, Standard Chemical Company; Dr. C. L. Chambers of Des Moines, a syringe set, The A. S. Aloe and Company; Dr. W. E. Baker of Des Moines, golf balls, Wallace-Homestead Company; Dr. D. C. Conzett of Dubuque, golf balls, Wallace-Homestead Company; Dr. J. A. Thorson of Dubuque, five dollar order, Younker Brothers; Dr. L. L. Leighton of Fort Dodge, pill case, The Zemmer Company; Dr. C. A. Sones of Des Moines, golf balls, The Gerber Company; Dr. O. W. King of Des Moines, golf balls, The Gerber Company; Dr. John K. von Lackum of Cedar Rapids, box of products, The Abbott Company; Dr. D. C. Hankey of Council Bluffs, atomizer, The Devilbiss Company; Dr. C. A. Nicoll of Panora, jar of compound for burns, Physicians and Hospitals Supply Company of Minneapolis; Dr. H. I. Down of Sioux City, cigarettes, Philip Morris and Company; Dr. E. T. Warren of Stuart, drug set, Merck and Company; Dr. Robert N. Larimer of Sioux City, cigarettes, Philip Morris and Company; Dr. M. A. Blackstone of Sioux City, cigarettes, Philip Morris and Company; Dr. Albert E. Shaw of Des Moines, golf balls, The Gerber Company; and Dr. George A. May of Des Moines, golf balls, The Ger-

ber Company. In addition Horlick's Malted Milk products were distributed to various members, as were four boxes of larostidin, donated by the Hoffman-La Roche Company. A pen desk set, given by the C. B. Fleet Company, and a ten dollar order for products from the Hynson, Westcott and Dunning Company, are being held by the Polk County Committee for future distribution.

An informal election of officers resulted in Dr. Donahue of Centerville being named president, and Dr. Thorson of Dubuque, secretary and treasurer. It was suggested at the business meeting that these annual golf tournaments should receive more publicity, and the officers were instructed to take care of this item for next year's event.

KEOKUK COLLEGE RÉUNION

The biennial reunion of the Keokuk Medical College and its allied organizations, the Keokuk Dental College, the Keokuk College of Pharmacy and the Training School for Nurses, will be held in Keokuk, Monday, June 20. Invitations are being mailed to all graduates and former instructors by Dr. Bruce L. Gilfillan, chairman of the reunion committee. Registration will be at the Hotel Iowa, and the committee hopes that many graduates will be able to attend the gathering.

MEMBERSHIP ROSTER IN JULY JOURNAL

The July issue of the JOURNAL will carry a complete roster of the membership of the Iowa State Medical Society as of June 25, 1938. County medical society secretaries are urged to impart this information to delinquent members in their respective societies so that dues may be paid and these physicians' names may be included as members in good standing for 1938. The July JOURNAL already carries the Transactions of the House of Delegates, and the House of Delegates at its 1936 session voted to include the roster of membership with the thought that this addition would make the July issue a most valuable and complete reference number of the activities of the State Society.

SPEAKERS BUREAU RADIO SCHEDULE

WOI and WSUI—Wednesdays at 4:00 p. m.

June 15. Summer Skin Troubles, L. J. Frank, M.D.

June 22. Sex Education, L. R. Woodward, M.D.

June 29. Water Hazards.

July 6. Heart, Daniel J. Glomset, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. S. E. LINCOLN, 2220 East Thirty-second Street, Des Moines

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

GREETINGS FROM YOUR NEW PRESIDENT

In assuming the office of president of the Woman's Auxiliary to the Iowa State Medical Society, I wish to express appreciation of the honor conferred upon me. As a state organization we are entering upon the tenth year of our existence and I have confidence in the steady growth and increasing interest in auxiliary work. Each year has added new county organizations and it is my hope that a number more will be added this year.

I wish to urge units to use educational work on the programs. There is a vast field of knowledge to be gained and so much material available that we might well adopt the slogan "Every member a well informed member." Let every member be aware of opportunities for service in regard to the "public relations" work. Let us also strive to have a copy of Hygeia available for every girl and boy of Junior High School age to read.

We have had the pleasure and inspiration of working together under many very capable officers during the past years. It is my desire to continue to work together in carrying out the aims and programs that have been arranged for auxiliary work.

How true it is, "If we really know people, we like them." This is the great objective of our organization. Let us aim really to know each other. There is a large place for sociability, friendship, sympathy, and understanding among the wives of the medical fraternity. It occurs to me that herein lies our greatest opportunity, in knowing, understanding, yes and loving one another, thus helping the medical profession face the problem of the day with a united front.

Mrs. D. W. Harman, President

FROM YOUR PAST PRESIDENT

After all too brief a year comes the close of my administrative service as your president. In addition to my own Polk County Auxiliary I have been a guest in the Dallas-Guthrie unit, and in the Madison County unit for its organization meeting. Because of this presidency, I am serving as advisor to the Public Health Committee of the Iowa Federation of Women's Clubs. I attended the National Board sessions in Chicago last fall, and enjoyed meeting the leaders in the national and other state auxiliaries. Several states conduct essay contests similar to ours. Pennsylvania is outstanding for the financial aid

given to needy doctors and to doctors' wives. A number of states are doing philanthropic work for hospitals.

You will be interested in a quotation from the last message of the National president, Mrs. Kech, who met with us last fall. She says, "The medical profession of this country is confronted with new, strange, social, economic and professional problems which vitally concern the entire population. As an Auxiliary we must be alert and active to interpret the position of medicine to intelligent lay women, whom we daily contact."

My own attitude, as a state president is that as auxiliary members we should be friendly and know each other in our county auxiliary units, gaining such knowledge of medical problems as we are able to absorb. As individuals we should give of our time and talent to lay organizations according to the background of training which we possess. Most women who happen to be doctors' wives give freely of themselves because of a sincere interest in some altruistic work. Mrs. W. L. Bierring of Des Moines served as delegate to the National Auxiliary meeting in Atlantic City.

Questionnaires were sent to the county presidents last fall; replies were received from fifty per cent of the units. I should like to suggest that questionnaires be sent late in March hereafter, so that county auxiliaries will be sending the reports back immediately after the annual meeting in the several counties, thus giving the state auxiliary the names of the new officers and other information for the incoming administration.

I wish to express my appreciation for the splendid cooperation of the office staff of the Iowa State Medical Society in mailing the reprint of the auxiliary page to the members each month; in mimeographing and enclosing materials with the reprints; and in assisting with the essay contest. The Advisory Committee under the chairmanship of Dr. C. B. Hickenlooper has given valuable assistance and advice.

I have called on each officer and chairman for help throughout the year and they have given generously of their time and money to promote the program of work. Particularly is this true of Mrs. Channing G. Smith as Chairman and of Mrs. W. A. Seidler in the heavy task of managing the essay contest. Mrs. E. L. Bower has been very gracious in taking over the

work of the historian due to the illness of Mrs. E. D. Morrison of Fort Dodge. We close the year with four hundred thirty-five members and with three new auxiliaries, Madison, Calhoun, and Sac.

It has been a pleasant experience to serve as your president. The recent annual meeting revealed to you the loyal and friendly spirit with which your state officers and the Polk County Auxiliary took up the threads of work which I had to drop on April first. I am sure you will share with me the inspiration of their unselfish service.

Mrs. S. E. Lincoln, Past President

THE ETHICS OF ADOPTION*

(Continued from last month)

A provision was added to this section of the adoption law which permitted that the "investigation and period of residence may be waived by the court *upon good cause shown* when satisfied that the proposed home and the child are suited to each other."

Since there is seldom sufficient investigation to "show cause" the frequent use of the privilege of waiving the six months' residence requirement shows either a lack of understanding of the tragic results of disregarding this safeguard or indifference to the consequences. When the six months' residence period is waived, the adoption decree usually simply states, "The six months' residence period is waived" and no reason is given.

The requirement laid upon the party placing a child for adoption that "no petition shall be granted until the child shall have lived for six months in the proposed home" is to establish further the suitability of the child and home to each other, and to eliminate as far as possible, the danger of taking this important step without due thought and consideration. The six months' residence requirement before completing adoption is essential to good and safe procedure. The waiving of the residence requirement was evidently meant to be a wise provision to cover unusual circumstances and to be used at the discretion of the judge, based upon definite knowledge of the facts covering the conditions surrounding the child and the foster home and "upon good cause shown." An inspection of these adoption decrees, however, reveals a disquieting large number of cases where the six months' resident period in the foster home is waived without any "cause shown"!

Section 10501-b8 requires that records of adoption decrees shall be kept: "the findings of the court in any petition for adoption shall be made a complete record and same shall be filed as are other records of the court, but in addition thereto, the clerk of court, shall cause a duplicate copy thereof to be sent to the Division of Child Welfare for their files." If the findings of the court are made a "complete record" certainly such findings are not "sent in duplicate to be filed with the adoption decree" in the state office as required by this section of the law.

*This is the final installment of the article which has been especially prepared for the Woman's Auxiliary by Mae Habenicht, M.D., of Des Moines. Parts One and Two appeared in the April and May issues of the JOURNAL.

These decrees contain only the minimum of information at best and in many cases even the name of the child given in adoption does not appear but only the child's given name or his adoptive name; that is, the name the foster parents have given him. The child thereby completely loses his identity.

It can readily be seen that the value of our adoption law is rendered nil by these careless practices. If we are to correct these faults there must be a uniform standard of procedure established and maintained by some central agency. Specific instances could be given *ad infinitum* of serious situations existing for both children and foster parents because of failure to comply with the wise procedures required by our law. In order to protect both the child and the foster family from the results of these bad practices it is suggested that a modifying section be enacted to this chapter of the code, placing the responsibility for such investigations upon the State Division of Child Welfare whose functions include establishing and maintaining standards of work.

Upon the filing of a petition to adopt, the judge would then have available the services required to make a thorough investigation. The request of the judge for a complete report on the case would insure uniform standards of investigation before an adoption decree was granted and would allow time to give due consideration to this important procedure.

A serious difficulty in our present method of procedure is the lack of facilities for making investigations in these cases. In one or two counties the judge refers adoption petitions to an organization qualified to make such an investigation but this is entirely dependent on the attitude of the judge. To establish the standardization of procedures the state department charged with this responsibility should pass upon the adequacy of the investigation and report its findings to the judge. Every petition coming up for adoption would then require the approval of the State Division of Child Welfare and thorough inspection of the child-placing and home-finding in each instance.

Certainly every safeguard should be set up to insure careful consideration of all the conditions surrounding both parties in adoptions since by an action requiring only a few minutes in court the whole future of a child's life is determined. When the public learns of the pitfalls in adoption, intelligent public opinion will demand that all reasonable safeguards be observed in the placement and adoption of children.

Muscatine County

Newly elected officers of the Woman's Auxiliary to the Muscatine County Medical Society are: Mrs. B. E. Eversmeyer, president; Mrs. Walter Norem, president elect; Mrs. Harriet Heidel, secretary, and Mrs. E. L. Emerson, treasurer. All officers are of Muscatine.

SOCIETY PROCEEDINGS

Appanoose County Annual Meeting

New officers elected at a meeting of the Appanoose County Medical Society held in Centerville, Friday, May 6, include: Dr. N. W. Labagh of Mystic, president; Dr. W. L. Downing of Moulton, vice president; Dr. C. S. Hickman of Centerville, secretary and treasurer; and Dr. J. C. Donahue of Centerville, delegate.

Bremer County

The Bremer County Medical Society met Thursday, April 28, at the Hotel Fortner in Waverly for its regular scientific session. Following a six-thirty dinner, papers were presented by O. R. Hyndman, M.D., of the surgery department of the State University of Iowa, College of Medicine, on Treatment of Head Injuries; and by C. Gregory Barer, M.D., of the department of neurology of the State University of Iowa, College of Medicine, on Diagnosis of Brain Tumors.

The next meeting of the society was held Thursday, May 26, at the Hotel Fortner in Waverly. L. C. Kern, M.D., of Waverly, gave an excellent report of the recent State Society annual session, and C. K. McCarthy, M.D., of Des Moines, presented the Tuberculosis Case Findings program, after which the society voted to approve the program, and requested that it be carried out in Bremer County. The session closed with the showing of a two reel film on Pertussis.

E. C. Kepler, M.D., Secretary

Cherokee County

John M. Pope, M.D., of Cherokee, furnished the scientific program for the Cherokee County Medical Society when that organization met at the Sioux Valley Hospital in Cherokee, Tuesday, May 10. His subject was Hemorrhages of the Skin.

Crawford County

On Monday, May 7, the Crawford County Medical Society held its regular monthly meeting at the Hotel Denison in Denison. A large attendance enjoyed a steak dinner after which the scientific program was presented. William L. Sucha, M.D., professor of orthopedic surgery at Creighton University School of Medicine, Omaha, delivered a lecture on Low Back Pain from an orthopedic standpoint. Dr. Sucha's lecture was extremely well illustrated with skeletal specimens and x-ray films, and the legal significance of low back pain was elaborated upon. Joseph D. McCarty, M.D., of the University of Nebraska, College of Medicine, Omaha, spoke on Low Back Pain from the internist's standpoint. Dr.

McCarty's lecture was punctuated by many scientific points of data. Following the lectures the meeting was opened for general discussion.

J. James Duffy, M.D., Secretary

Hardin County

William F. Mengert, M.D., associate professor of obstetrics and gynecology at the State University of Iowa, College of Medicine, spoke on Backache, before members of the Hardin County Medical Society at a meeting held in Eldora, Tuesday, May 24.

W. E. Marsh, M.D., Secretary

Johnson County

Upon invitation from Mr. R. E. Neff, the Johnson County Medical Society was entertained by the University Hospitals for the regular May meeting of the group, which assembled at six-thirty, Wednesday, May 4. The scientific program consisted of a paper on The Present Status of Laboratory Diagnosis, read by I. H. Borts, M.D., of Iowa City.

W. M. Fowler, M.D., Secretary

Polk County

The regular monthly session of the Des Moines Academy of Medicine, and Polk County Medical Society was held Tuesday, May 31, at Broadlawns Tuberculosis Department, with the following program: Surgical Consideration of Biliary Tract Disease, with report of cases, Joseph B. Priestley, M.D., of Des Moines; and Advances in Surgery During 1937, Julian M. Bruner, M.D., also of Des Moines. After a social hour the meeting adjourned.

A special meeting of the society was held Tuesday, May 24, to hear John W. Martin, Jr., M.D., lecture on The Evaluation of Kidney Function Tests. The essayist is at present on the faculty of the Western Reserve University School of Medicine, Cleveland, Ohio. He was introduced by his father, John W. Martin, M.D., of Des Moines, and discussion of the lecture was opened by Julius S. Wein-gart, M.D., of Des Moines.

Sac County

The Sac County Medical Society met in regular session at Schaller, Friday, May 27, in the Legion Hall. James E. Reeder, M.D., of Sioux City, presented a detailed report of the recent annual session of the State Society, and Louis B. Amick, M.D., of Sac City, reported on the meeting of the Fracture Committee held during the Des Moines session. Dr. Reeder then gave an excellent lantern lecture on Deafness and the Use of the Audiometer. The talk

was well received and elicited many questions. The showing of a film on cancer was a feature of the evening's program.

G. H. Bassett, M.D., Secretary

PERSONAL MENTION

Dr. Harold W. Morgan of Mason City, spoke before the Clear Lake Lions Club, Thursday, May 19, and before the Rockford Commercial Club, Tuesday, May 17, on the accuracy of the blood test used in determining the amount of alcohol in the blood stream.

Dr. Frank L. Smith, who has practiced medicine in Newton for the past twenty-three years, has disposed of his interest in the Newton Clinic, and plans to take up permanent residency at his ranch near San Benito, Texas.

Dr. Wayland H. Maloy of Shenandoah addressed the local Kiwanis Club, Friday, May 6. Dr. Maloy spoke on "Factors in Relation to Causes and Prevention of Blindness."

Dr. Arnold L. Nelson, who has been associated with Dr. C. B. Hickenlooper in Winterset for the past seven years, has located in Des Moines where he plans to open an office with Dr. Charles Ryan, in the Southern Surety Building. He will limit his practice to surgery.

Dr. F. A. Bowman of Leon, spoke before the local Rotary Club Monday, May 9, taking for his subject, "Appendicitis and Its Symptoms." His lecture was illustrated with colored charts.

Dr. G. Barklie Johnston, a recent graduate of the State University of Iowa, College of Medicine, is locating in Estherville, where he will be associated with Dr. J. P. Clarke. Dr. Johnston comes directly from Rochester, Minnesota, where he has been taking special postgraduate work in pediatrics.

Dr. J. A. Pringle of Bagley addressed the Federated Clubs of Guthrie County, at the annual convention held in Panora, Friday, April 22. Dr. Pringle spoke on "Syphilis."

Dr. Carl A. Noe, for the past five years a resident member of the staff of the University Hospitals in Iowa City, will leave that institution July 1 to go to Cedar Rapids, where he will be associated with Dr. Wayne J. Foster in the practice of otolaryngology and ophthalmology.

Dr. Ludvig Gittler of Fairfield, spoke on "Diet and Dieting," for the Business and Professional Women's Club, Monday, May 23, at the Turner Hotel in Fairfield.

Dr. Paul F. Marling has recently announced his removal from Gladbrook to Traer, where he will be associated with Dr. A. A. Crabbe. Dr. Marling was graduated in 1936 from the University of Minnesota Medical School.

Dr. James D. Bradley, formerly associated with the State Hospital at Woodward, and the Iowa Institution for Feeble-minded Children at Glenwood, has located in Perry, where he will enter the private practice of medicine. He was graduated in 1935 from Northwestern University Medical School, Chicago.

Dr. C. V. Edwards of Council Bluffs, has received word of his appointment as assistant professor of obstetrics at Creighton University School of Medicine, in Omaha.

MARRIAGES

Miss Violet Power of Minneapolis, Minnesota, and Dr. William H. T. Howard of Decorah, were united in marriage May 1, at the Little Brown Church in the Vale near Nashua, Iowa. The young couple will make their home in Decorah, where Dr. Howard has been practicing for the past few months.

The wedding of Miss Jean Daniels and Dr. Byron M. Merkel, both of Des Moines, took place May 21, at the home of the bride in Des Moines. After a motor trip through the southern states, Dr. and Mrs. Merkel will be at home in Des Moines, where the bridegroom has practiced his specialty of eye, ear, nose and throat diseases for the past few years. He is the son of Dr. and Mrs. A. E. Merkel of Ankeny.

DEATH NOTICES

Boice, James C., of Washington, aged ninety-one, died May 17. He was graduated in 1876 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a life member of the Washington County and Iowa State Medical Societies.

Brackney, Herman John, of Sheldon, aged fifty-six, died suddenly May 4 as the result of coronary thrombosis. He was graduated in 1905 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the O'Brien County Medical Society.

Fraser, Walter, of Algona, aged sixty-eight, died May 19 after two paralytic strokes. He was graduated in 1893 from Marion-Sims College of Medicine, St. Louis, and at the time of his death was a member of the Kossuth County Medical Society.

Glann, Roy Carlton, of Bronson, aged fifty-nine, died May 24 as the result of carbon monoxide poisoning. He was graduated in 1905 from the Sioux City

College of Medicine, and had long been a member of the Woodbury County Medical Society.

Huston, Ross, of Des Moines, aged fifty-six, died May 2 after a heart attack. He was graduated in 1907 from the University of Illinois, College of Medicine, and at the time of his death was a member of the Polk County Medical Society.

MacLaughlin, Lucius E., of Cedar Rapids, aged fifty-five, died May 20 after suffering a stroke. He was graduated in 1907 from the University of Georgia, School of Medicine, and at the time of his death was a member of the Linn County Medical Society.

Mansfield, Jonathan Mellen, of Clinton, aged forty-five, died April 28 after an illness of two weeks' duration. He was graduated in 1917 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Clinton County Medical Society.

Moore, Walter Newlin, of West Branch, aged sixty-one, died May 22 after an extended illness. He was graduated in 1906 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Cedar County Medical Society.

Newcomer, Lloyd Ellenberger, formerly of Mason City, aged sixty-six, died May 6 at his home in Long Beach, California. He was graduated in 1903 from Rush Medical College, University of Illinois, and had long been a member of the Cerro Gordo County Medical Society.

Nordgren, Esaias, of Des Moines, aged sixty-eight, died suddenly May 16 after a heart attack. He was graduated in 1898 from the College of Physicians and Surgeons, Keokuk, and had long been a member of the Polk County Medical Society.

Robinson, John Blair, of Mount Vernon, aged eighty-five, died April 21, after an illness of more than three months. He was graduated in 1879 from the Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a life member of the Linn County and Iowa State Medical Societies.

OBITUARY

Herman John Brackney, son of John Wilson Brackney and Jennie Felter Brackney, was born October 29, 1881, on a farm in Tama County, Iowa, and passed away May 4, 1938, at his home in Sheldon, after six days of illness, death being due to coronary thrombosis. Upon his graduation in 1905 Dr. Brackney located in Sheldon, and in 1906 was married to Miss May Soesbe of Greene, Iowa. Dr.

Brackney was always in the foremost ranks of all public activities, a member of the American Legion and of several fraternal organizations. He was secretary of the O'Brien County Medical Society, and a member of the Northwest Iowa and Sioux Valley Medical Societies at the time of his death. Dr. Brackney was a good thinker, well versed in public affairs, well trained in medicine and surgery. He was regarded very highly by the profession and the general public. Dying at an age when his counsel and service were at the very peak of value and importance, the medical profession of northwest Iowa and the public in general will greatly miss this great and good physician.

W. R. Brock, M.D., Sheldon, Iowa

STATE DEPARTMENT OF HEALTH

(Continued from page 245)

to be forwarded to the laboratory, since a period of two weeks may elapse after onset of illness, before the Weil-Felix test becomes positive. Clinically, this patient is regarded as having Rocky Mountain spotted fever. Physicians who may have occasion to observe a case or suspected case of spotted fever, are requested to report promptly to the State Department of Health.

SPOTTED FEVER VACCINE USED AT TAMA RESERVATION

On May 23 and 27, 1938, prophylactic treatments with spotted fever vaccine were administered to 140 Indians at the Tama reservation. Although most of those treated were children, many of the Indian men and women availed themselves of the opportunity to develop protection against Rocky Mountain spotted fever, which a year ago caused six cases among Indians, with two deaths. Immunizing treatments were carried out by Ira Nelson, M.D., superintendent of the Sac and Fox Sanatorium, and A. A. Pace, M.D., visiting physician, Tama reservation, and members of their staff. The vaccine was supplied through the courtesy of R. R. Parker, Ph.D., Special Expert, United States Public Health Service, Rocky Mountain Laboratory, Hamilton, Montana.

PREVALENCE OF DISEASE

	Apr. '38	Mar. '38	Apr. '37	Most Cases Reported From
Diphtheria	8	17	21	Black Hawk
Scarlet Fever	880	1144	1123	Polk, Webster, Appanoose
Typhoid Fever.....	5	4	7	(For State)
Smallpox	195	171	220	Boone, Monona, Polk
Measles	925	678	42	Black Hawk, Polk, Pottawattamie
Whooping Cough...	100	115	128	Boone, Johnson, Woodbury
Cerebrospinal Meningitis.....	4	6	1	Polk
Chickenpox	337	455	154	Woodbury, Des Moines
Mumps	107	126	114	Woodbury, Dubuque
Influenza	11	43	59	Fremont, Grundy
Poliomyelitis	1	2	1	Butler
Tuberculosis	84	57	41	(For State)
Undulant Fever.....	5	14	13	(For State)
Gonorrhea	175	191	191	(For State)
Syphilis	365	404	341	(For State)

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- THE CEREBROSPINAL FLUID**—By Houston Merritt, M.D., assistant professor of neurology, Harvard Medical School; and Frank Fremont-Smith, M.D., formerly assistant professor of neuropathology, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$5.00.
- ESSENTIALS OF PRESCRIPTION WRITING**—By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$1.50.
- EYESTRAIN AND CONVERGENCE**—By N. A. Stutterheim, M.D., part time ophthalmic surgeon to the Johannesburg School Clinic, Transvaal Education Department. H. K. Lewis and Company, Ltd., 136 Gower Street, London, W. C. 1, 1937. Price, 7s. 6d. net.
- MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE**—Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$8.50.
- THE PHYSICIAN'S BUSINESS**—By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$5.00.
- PRACTICAL PROCTOLOGY**—By Louis A. Buie, M.D., professor of proctology, The Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$6.50.
- SURGICAL DISEASES OF THE MOUTH AND JAW**—By Earl Calvin Padgett, M.D., associate professor of clinical surgery, University of Kansas School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

- OPERATIVE GYNECOLOGY**—By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine, and Robert James Crossen, M.D., assistant professor. Fifth edition. Revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.
- SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK**—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1937.
- THEORETICAL PRINCIPLES OF ROENTGEN THERAPY**—Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.
- THE 1937 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT**—Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. The Year Book Publishers, Chicago, 1937. Price, \$2.50.
- THE 1937 YEAR BOOK OF GENERAL MEDICINE**—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1937. Price, \$3.00.
- THE 1937 YEAR BOOK OF GENERAL SURGERY**—Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Chicago, 1937. Price, \$3.00.
- THE 1937 YEAR BOOK OF PEDIATRICS**—Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago, 1937. Price, \$2.50.

BOOK REVIEWS

THE FUNDAMENTALS OF ELECTRO-CARDIOGRAPHIC INTERPRETATION

By J. Bailey Carter, M.D., clinical instructor, department of medicine, Rush Medical College. Charles C. Thomas, Publisher, Springfield, Illinois, 1937. Price, \$4.50.

Electrocardiography is a new and valuable laboratory aid to the practice of medicine. It has been employed long enough so that an appraisal of its work is possible. It is fortunate that a man of Dr. Carter's vast experience and mastery of the subject has undertaken the task in this little volume.

In a clear and concise manner the physiologic basis, technic, character, and significance of the various waves of the electrocardiogram are discussed. The author describes the electrocardiographic findings in various clinical conditions and has devoted a chapter to a resumé of its clinical value. This is followed by a series of well illustrated case histories. Finally, in an appendix, the significance of the multiple indirect leads is given. The book also contains a good glossary, an excellent bibliography, and is profusely and beautifully illustrated.

The value and the limitations of electrocardiography are authoritatively but conservatively stated. There is no superfluous verbiage. Hence the book will be of great value to the harassed clinician who wants to know "what the wild waves are saying" and will be equally valuable to the new electro-

cardiographer in checking any tendency he might have to make unwarranted statements as to the value of the electrocardiogram. D. J. G.

MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING

By Walter A. Bastedo, M.D., formerly assistant clinical professor of medicine, Columbia University. Fourth edition, reset. W. B. Saunders Company, Philadelphia, 1937. Price, \$6.50.

To the practicing physician, this new edition which has undergone a general revision of the complete text, will bring valuable information of drugs and remedies discovered since the last edition in 1932. Dr. Bastedo discusses the merits and demerits of the drugs founded on physiologic, pharmacologic and clinical sources and aids the practicing physician in his choice of medications.

Among the newer drugs discussed are amino-acetic acid (glycine), atabrine, coramine, dilaudid, dinitrophenol, mandelic acid, protamine zinc insulin and sulfanilamide (prontylin). The marihuana habit, the toxic effects of aminopyrine and dinitrophenol and carbon tetrachloride are treated in detail. Digitalis receives a very complete discussion because of its importance as a drug and also because of the recent changes in our knowledge of cardiac physiol-

ogy and therapeutics. The articles on the various hormones have been rewritten.

Not the least valuable portion of the book is that chapter on prescription writing which deals with only one method and should be studied to assist the practicing physician to recover the knack in writing his own prescriptions using the knowledge derived from this practical book. E. W. A.

OPERATIVE GYNECOLOGY

By Harry Sturgeon Crossen, M.D., professor emeritus of clinical gynecology, Washington University School of Medicine; and Robert James Crossen, M.D., assistant professor. Fifth Edition, revised and reset. The C. V. Mosby Company, St. Louis, 1938. Price, \$12.50.

To those who, both as students and surgeons, are familiar with the works of Dr. Crossen this book will need no introduction. It maintains the excellence of its previous editions.

Because of the great increase in knowledge of gynecologic physiology and structure and its application to the cure of diseased conditions, the book has been largely rewritten and extensively rearranged. Of the 1,264 illustrations, 200 are new. Every condition of the reproductive organs is discussed, the authors selecting the surgical procedure that best fits the given condition, rather than trying to apply one operation to all cases of a lesion regardless of type and details. All phases of surgical treatment are discussed such as the preparation for operation, anesthesia, the technic and after treatment. There is also a chapter written by Dr. H. S. Brooks, Jr., on the intestinal tract in relation to gynecologic surgery. The medicolegal phases of surgery are also discussed.

It is a book which could well be studied by all of us who are treating gynecologic conditions.

A. D. J.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS

By John Albert Keys, M.D., clinical professor of orthopedic surgery, Washington University School of Medicine; and H. Earle Conwell, M.D., Birmingham, Alabama. Second edition. The C. V. Mosby Company, St. Louis, 1937. Price, \$12.50.

This volume is a well prepared book, written by men who have had a wide experience with the care of acute fractures. Concise descriptive matter accompanies the numerous illustrations. To the average individual one illustration is worth several pages of descriptive matter, and a great many of the fractures discussed are so pictorially portrayed that very little discussion is necessary. If one is to obtain satisfactory results, particularly in the bad cases, a thorough knowledge of the anatomy and pathology of each fracture is necessary, and this book brings out those points.

Several good methods of reduction are given for most of the fractures, and the latest methods with

the use of pins are shown for those who care to use them. The authors show no particular partiality to any one method, but discuss those which give the best results. A chapter on the complications of fractures will be greatly appreciated by the general practitioner, because it is usually the complication which brings on the worry and grief. The chapter on the Workmen's Compensation Law should be included in every book on fractures because the present day machine age is increasing the number of fractures and every doctor taking care of fractures should know something about compensation law for his own benefit. The chapter on the medicolegal aspects of fractures is very timely, because a bad fracture result speaks for itself, and a large percentage of actions for malpractice are brought on by these patients. This chapter discusses the patient's rights and the doctor's rights. It also takes up points which will aid the doctor in preventing malpractice suits from being brought against him.

This volume will be very helpful and useful to anyone doing fracture work. D. C. W.

CANCER MANUAL

Developed by The Executive Cancer Committee of the Iowa State Medical Society, and published by The Athens Press, Iowa City, Iowa, 1938. Price, \$1.00.

The Cancer Manual developed by the Executive Cancer Committee of the Iowa State Medical Society is an instructive book dealing with malignancies as they occur in the various portions of the human body. Each system is dealt with individually. The early symptoms, diagnosis, differential diagnosis, treatment and prognosis, are accurately and concisely set forth. The better forms of treatment are indicated as are the types of pathologic processes found. The manual should serve to keep the medical profession ever mindful of the high incidence of malignancy, and this in itself will be an extremely valuable contribution.

Quoting from the introduction "The lay public must be taught the significance of early signs of malignant disease and that early cancer is curable with the therapeutic armamentarium available throughout the country." The last portion of this statement is obviously incorrect, and the many practicing physicians who come into contact with malignancies will certainly question this thought. Early diagnosis will prolong the lives of many patients. However, the inherent characteristics of certain cancer cells defy the earliest possible diagnosis and the most expert treatment. Let us have a care when we tell the public "early diagnosis will result in cure," lest the boomerang strike us a heavy unsuspecting blow several years hence.

The members of the Executive Cancer Committee of the Iowa State Medical Society should receive the most wholehearted appreciation of the physicians of Iowa for their very sincere and productive efforts in the compilation of this cancer material, and the distribution of it to the physicians of Iowa.

J. B. P.

THE 1937 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY

Edited by Fred Wise, M.D., professor of clinical dermatology and syphilology, New York Postgraduate Medical School and Hospital of Columbia University. The Year Book Publishers, Chicago, 1938. Price, \$3.00.

This annual work is arranged to acquaint both the man in general practice and the specialist with the material on the advances in dermatology and syphilology which have been presented within the past year. The work is prefaced by an instructive article on the modern treatment of common fungous affections. The volume contains sections on infections, both mycotic and bacterial, allergy, drug eruptions, hematogenous eruptions, neoplasms, therapy, etc., all of which are composed of abstracts from leading articles which have appeared in the medical literature relating to these subjects. These articles are supplemented by editorial comment in many instances. The last part of the volume contains a section on recent observations on syphilis and its therapy.

W. M. W.

THE 1937 YEAR BOOK OF GENERAL THERAPEUTICS

Edited by Bernard Fantus, M.D., professor of therapeutics, University of Illinois College of Medicine. The Year Book Publishers, Chicago, 1938. Price, \$2.50.

This volume gives a comprehensive survey of all of the recently developed therapeutic procedures. While many of these measures are just out of the experimental stage and in the infancy of their development, many others have amply established their value as definite therapeutic agents. In addition to these very recent developments, there are abstracts of many articles which evaluate accurately the efficiency of therapeutic procedures introduced in the last few years. They also give the details of the best methods of administration in order to obtain the maximum benefit from such agents. In all abstracts the subject matter is as concise and condensed as is consistent with a clear understanding of the subject. In the most recent developments, the subject matter is taken up in detail so that the reader may become familiar with all phases.

Some of the more popular recent therapeutic agents discussed are sulfanilamide, mandelic acid, the vitamins and indications for their administration, internal gland products, newer methods of anesthesia, fever therapy, recent developments in the treatment of psychosis. The newer methods in physical therapy are also discussed.

The subject matter in this book extends over a wide range of the field of practice. It is arranged systematically and is well indexed. Because of its brevity and the fact that in a book of this kind a

large amount of valuable information must be concentrated in a relatively small space, there is an extreme minimum of unimportant details.

It would appear to me that this book should be most practical for the general practitioner. In spite of its brevity no important details are omitted in the abstracts. In abstracts where it is essential, the details of actual methods of administration are given. Those who limit their practice to special fields will find much of general interest in this book as well as abstracts of the latest developments in their own field.

H. C. B.

HEALTH EDUCATION OF THE PUBLIC

By W. W. Bauer, B.S., M.D., director, bureau of Health and Public Instruction, American Medical Association; associate editor of *Hygeia*; and Thomas G. Hull, Ph.D., director, Scientific Exhibit, American Medical Association; associate professor of bacteriology, University of Illinois, College of Medicine. W. B. Saunders Company, Philadelphia, 1937. Price, \$2.50.

In the foreword of this book Dr. Fishbein has quoted from "The Principles of Medical Ethics" to the effect that physicians should give advice concerning the public health of the community and should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine. The conclusion is that physicians should know best how to correlate endeavors of "Adult Health Educators" in allied fields. The authors, both of whom are admirably equipped by practical experience and research to advise on this subject, have done just that, to tell how.

The first chapter of the book is devoted to establishing a definition for health education. The distinction is made between health education as provided by reliable organizations and health information, much of which may be misinformation, given by unqualified, unreliable and unethical individuals. Health education begins in the schools and continues throughout adult life. It is an obligation of medical and allied organizations. The purpose is to teach health, not medicine. The chapter headings provide an index of methods for dissemination of health education. Each method is replete with suggestions based on experience and with references to sources of information. The authors are practical in their consideration of suitability and adaptation to purpose of the many methods, and give proper attention to the relative values of cost, appeal, demand, availability of materials and correlation of methods.

The book is something entirely new in the way of a text, reference book, and index of sources of materials and is a most valuable and practical manual for all people engaged in health education.

E. M. K.

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, IOWA, JULY, 1938

No. 7

MEDICAL ECONOMICS*

REVEREND ALPHONSE M. SCHWITALLA
St. Louis, Missouri

I am not going to spend time on preliminaries this morning. With an audience which is as fully familiar with the problems of medical economics as this audience is, I am sure we can plunge into the very heart of the problems confronting medicine today and the developments which have taken place in the course of the last year. Your chairman was good enough to say just a moment ago that we ought to keep in close touch with medical economics, that it ought to be part of the interest of a progressive medical man, and I am assuming that such is the case in this audience.

Obviously it is tremendously important for us to keep medical viewpoints before the public today. That remark is inspired by the fact that more and more non-medical agencies are beginning to take an interest in the medical problem of the nation. We are not denying for a moment, the American Medical Association would not deny, and no sane practitioner would deny that the medical problem interests much wider circles than simply the relatively narrow spheres of the professional practitioner.

We know that government is concerned with the medical problem, with the supplying of medical care to the American nation. We cannot deny that our state legislatures should give very serious and very concentrated attention to the problem of supplying medical care, not only to our urban but, especially, to our rural communities. We must admit that the nursing profession, the profession of medical social work and many other agencies of one kind or another, the laboratory technicians, the physiotherapy technicians, the radiologic technicians, the medical record librarians, the hospital administrators, are all concerned with the problem of supplying medical attention or medical care to the American people. However, as soon as these

groups break away from the physician himself, immediately we know something is going to happen for which the physician is going to be held responsible, and which, after all, he cannot possibly help. There have been instances upon instances during the last year which give us some indication that the viewpoint of medicine is not always being considered by these groups who are working on the fringe of medical attention. I could spend considerable time reviewing, for example, the developments in nursing education which are today taking place and which, to my way of thinking, are neglecting the fundamentals of medicine. The new curriculum is not making medical attention to, and consideration of the patient the primary thought in the education of the nurse. The nurse is being brought up in this new curriculum, as I see it (and I have analyzed it) on the thought that she is rendering a social service, and that the patient, while in theory is the primary consideration, in reality he becomes a secondary factor. The stresses are not laid primarily upon the patient; they are laid upon the social thinking of the nurse.

Perhaps that is as it should be today; but I do insist upon this; if nursing is going to remain an essential adjunct to the practice of medicine, and if it is going to be a bulwark for the supply of adequate medical attention to the American people, it cannot afford to break away from those solid moorings from which nursing itself started its career. Nursing cannot possibly affiliate itself more and more with the work of the medical social worker. The nurse cannot become a half-formed social worker if she is to fulfill her duties as a nurse.

I would like to stop and discuss with you, if time allowed, the various trends in the auxiliary professions, such as the educational trend in the development of the radiologic technologist; of the strains being developed between the radiologist and the radiologic technologist, the lack of clearness in the definition of mutual responsibility. All

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

of those things, I think, are matters of serious concern not only to the medical profession but also of very serious concern to the development of medical economics. At the present time curricula are being written in many of these auxiliary branches. There are standardization activities in many of them. I think it behooves the medical profession to interest itself in these problems and to lend a guiding hand wherever such guidance will be accepted. In some places it is not being accepted. It is for this reason that I come back to my first thought. It is most important for us to keep before the public the importance, the central importance, of the medical viewpoint.

If you asked me to define that more fully, I think I would accept the challenge, and accept it without very great fear that you and I would not reach complete agreement in a very short period of discussion. By the medical viewpoint I mean, first, the insistence upon the patient as the central point of interest. The patient, of course, is a human being. I recognize the fact that he lives in a given environment, in a given society, that he is on a definite economic and social level. All of those things we will accept. We will accept the statement, also, that he is the concern of the dietitian, that he is the concern of the medical social worker. Still there remains for the doctor, the central responsibility of caring for this human being when he becomes a patient, and all of the other activities can do no more than supplement the activity of the physician. When any profession loses sight of this idea, which I believe we should call the medical viewpoint, it is drifting toward non-essentials, and it should be brought back to a realization of this central problem.

I would go a little farther, it seems to me, in defining the medical viewpoint, because as you see it has a direct bearing upon the problem of medical economics. It seems to me that the medical viewpoint also implies not only that we should lay stress upon the importance of the patient, but that the physician is the only one who is capable, by his training and his whole experience, to view the patient as a whole. The focal point of the physician's interest is the patient as a whole, his medical problem, his illness in relation to society, in relation to economics, in relation to education, in relation to vocational activity, and in relation to industry. The doctor stands at the focal point of all the auxiliary professions concerned with the patient, and he is the only one who can integrate the concerns of all those engaged in the patient's care; yet there are other professions who are telling the medical profession to view the patient as a whole! The psychologist, that is, the non-

medical psychologist, tries by his own methods, clumsy and inexperienced as they are (I do not say this of all of them, needless to say), to inject his thinking into a medical problem without proper regard for the organic basis of the psychological difficulty. The medical profession is suffering from many inroads beside those I have touched upon, and I am giving you these only as samples. You see how important it is to keep on stressing the medical viewpoint in all of these different activities.

A second danger, which has loomed particularly large in the course of the last year, is the danger of the unjustifiable extension of public health influence, and I say that with all the emphasis I can muster. I am the last person in the world to insist that public health services should be restricted. Let us extend public health facilities to the fullest, most feasible, practical and safe extent, but, by the same token, let us insist that public health influence justify its inroads into some of the activities that are going on at the present time. As a sample of what I mean, I should like to submit the following illustration. The governor of one of our states, with whom I had a conference less than three weeks ago, called for a little discussion of cancer. He wanted to know why it was that I had warned against regarding cancer care as a public health measure. He reasoned that what was good for tuberculosis should be good for cancer, and since the public health service had taken over the problem of tuberculosis, it should likewise take over the question of cancer.

I said to him, "Your Excellency, do you not realize the difference in the problem? When public health service assumed the public health program for the care of tuberculous patients, tuberculosis was a relatively well understood disease. I do not say it was exhaustively understood, but the mode of infection, the mode of transmission, much about therapeutics, much about the after-care, much about the social implications, were well established. Our sanatoria, the public health sanatoria, were developed on the experience of the private tuberculosis sanitarium. Today, with regard to cancer, none of this is true. We do not know the etiology of cancer, we do not know the rational therapeutics of cancer. We have no way whatsoever of knowing, even remotely, how the disease is transmitted. How can you base a sound public health program for the care of a disease upon a condition which is so entirely different from the conditions that existed at the time when public health service took over the care of the tuberculous patient?"

It is a serious matter. Now that the govern-

ment has actually announced its program of stimulating research and perhaps stimulating more public health activity, what can the government do safely? It can, of course, stimulate an educational program, and it should stimulate that; but you know as well as I that when you tell a group of people you want cancer diagnosed early, and if cancer is diagnosed early you are going to be able to cure many more people, you do not subscribe to that statement. You cannot, as medical men, because you know the difficulties of an early diagnosis of cancer. You can try by all means; you can invite more people to your offices and to your clinic; all of those things are possible and necessary to do, but in the last analysis we are not as yet ready to write sincerely a sound, comprehensive, well-founded public health program for the control of cancer. It must still remain an educational effort. The place to attack the cancer problem today is not through public health programs. It is in the laboratory and in the clinic. We cannot possibly entrust this task to the public health service, and we must keep the major responsibility for cancer, and the study and prevention of cancer, in the hands of the doctor who is in daily contact with the patient.

A third danger I see is the tendency to oversimplification of the problem of supplying medical care. What do I mean by that? I mean the attitude of mind which implies, if it does not openly say, that if we only had better medical administrators, then surely the country's health would be better safeguarded. So much of the literature during the last year, with reference to the extension of public health facilities, with reference to the government's control of medical facilities, with reference to the enlargement of the hospital field, has been full of menace, because the problem, which is essentially a complex problem, is being "simplified" by those who see in an intensification of administrative control over the medical man and the hospital and the nurse, the solution of the nation's problem in the field of health care. We know, again, that this course of action is an impossibility. We know that the minute we make an administrative adjustment, we must immediately see whether it is possible to make a medical adjustment to fit that administrative adjustment. When there is so clear cut an objective, anything we do with reference to any part of this vast program must be measured in terms of the objective. By way of illustration, it has been suggested that we obtain a sworn affidavit from every person who comes into one of our public clinics, to determine whether that person is "sufficiently indigent" (whatever that

means) to entitle him to free medical care. The moment you get that affidavit, you have social problems of the utmost difficulty confronting you. We immediately find that we are in conflict with certain state laws. We find we are in conflict with the prescriptions of certain insurance companies who have invaded the field. The patient, in place of being safeguarded by his affidavit, becomes entirely deprived of any possibility of securing medical attention.

In one place where I happen to know the situation rather intimately, patients have actually been dismissed who became potential menaces by reason of communicable diseases. These patients would undoubtedly have been detected if it had not been for the delay necessary to secure the affidavit to which I have referred.

These problems cannot be simplified. We must recognize the fact that the medical problem is one in which medicine is fundamentally and necessarily the focal point, and all of the other agencies cannot do otherwise than accept the leadership of medicine, which has long since vindicated its right to be considered master in its own house. We cannot let that house pass into the hands of those who are not sufficiently familiar with the intricacies of the medical viewpoint.

I would like to review briefly, some of the activities of the medical societies which have come particularly to my notice. I want to stress these points because, when one appears before a state medical society, it is vastly important to view your own activities in the light of the larger stage. The great, outstanding development in the activities of the medical societies, in the field of medical economics, has been the very rapid growth of group hospitalization plans. I want openly and frankly to confess the fact that at one time I was opposed to all group hospitalization plans. I studied four of the Iowa plans which developed prior to 1932 when the American Medical Association, particularly Dr. Leland if you recall, laid down such very clear cut, sharply defined requirements for an acceptable group hospitalization plan. Prior to that there were growing up here in Iowa, I was told, no fewer than eighteen different plans on a private basis. Four of them I studied intimately. These companies were making promises that could, by no stretch of the imagination, possibly be kept. In the last two and one-half years, since the medical societies have taken over the organization of the group hospitalization plans, do you realize that you have more subscribers in the group hospitalization plans, under the medical societies of the country (I am talking only of those) than the whole American Federation of Labor has

developed during the last twelve years? You have had a larger increase, a larger enrollment in the group hospitalization plans than there has been in the labor unions in the course of twelve years. In the last two and one-half years the subscriptions for group hospitalization have been numerous. That gives you some idea of how popular the idea is.

The American Medical Association has, be it said to its credit, and the local societies have, be it said to their credit, put their finger upon a scheme which undoubtedly is meeting the needs of a certain class of the population. If it is true, as it undoubtedly is in some localities, that we are still reaching the white-collared classes too much, that we are still catering a little too much to the office secretary, the teacher and the nurse, and to the salaried employees in the offices of our industries, and that we are not reaching down sufficiently into the "overalled" classes, for whom after all these plans have been developed, let us hope that, as the reserves and surpluses in these various group hospitalization plans accumulate, we will be able to reach the less privileged groups of the population. I was tremendously impressed with an experience I had as secretary of one of these boards in St. Louis. My criticism of the official in charge of that group hospitalization plan was, that he was bringing in subscribers whom I did not particularly care to reach; that is, men and women who would have had hospital care anyway, even if there were no group hospitalization plans in existence. This official interested himself in reaching the industrial groups, and in less than six months he doubled the number of subscribers in the "overalled" classes. We have, inside of two and one-half years, a subscription list of 44,000 subscribers. It can be done.

Cleveland is a magnificent example of what can be achieved. Buffalo gives us, also, a splendid example, as does Rochester. Many of these cities have labored hard at this thing. In the rural areas the group hospitalization plans are gradually beginning to develop by leaning upon the hospitalization plans in the metropolitan centers. In a neighboring state we are reaching out into no fewer than seven counties and making them dependent upon the group hospitalization plan, not that of the state society because the law in that particular state prohibits it, but on the local group hospitalization plan which has developed in one county. We have reached over into a neighboring state and enlisted the interest of the insurance governmental officials in that state. They granted a license, without any question or quarrel whatsoever. We are now operating in two different

states and in no fewer than nineteen different counties.

The medical-dental service bureaus, as you know, have not progressed to their fullest extent. We feel that the medical-dental service bureaus have something in their organization that is not as yet fully meeting the needs of either the medical man, the dentist or the people at large.

The central admissions bureau, the third element in many of these plans, it still in the process of development in practically all localities in the country, and, as far as I know, there is not a single one of those plans which has as yet met with unqualified acceptance. One of the greatest steps forward taken by the American Medical Association was at the last annual meeting when it accepted the challenge of the federal government with all the courage and all the steadfastness that is demanded of an agency which must oppose itself to certain forms of governmental thinking. The American Medical Association accepted the challenge and will conduct its own survey of the health facilities of the country. As you know, in many of our localities, that particular problem has been taken over with the utmost enthusiasm and, I believe, with the utmost capacity. If medical men cannot survey the health facilities of the country in the way which they should be surveyed, then I want to know what particular group can undertake that responsibility.

I would like to call to your attention two developments in the course of the last year, both of which I think are of great importance to the American medical profession. I am referring, first of all, to the need for a national health program. The report of the Technical Committee on Medical Care appointed by President Roosevelt, has been widely discussed. It belongs to the history of medical economics during the last year and I must mention it. What is my quarrel with it? As you can easily see, it bears out some of the things I have said before. First, in it there are unwarranted generalizations without number.

Quoting from the summary, "The death of women in childbirth presents a special challenge." We all agree. "With adequate care from one-half to two-thirds of these deaths could be prevented." Let us not quarrel about the numbers but about the generalization behind that statement. The implications do not suggest statesmanship. The American people need to have confidence in the medical profession, and we cannot improve medical care by weakening the confidence of the people in what the medical man has done. It is clear to you that, when statements like the following are made, "Mortality of infants during the second

to twelfth months of life, though showing consistent decline might be further reduced by as much as one-half"—sufficient attention is not directed to the fact that the medical profession has already succeeded in reducing the infant death rate more than 200 per cent in the course of the last thirty years. The medical profession alone is responsible for this, and yet we are told that we should still further reduce this particular source of infant death by weakening, again, the confidence in the medical profession. This is a public document, published as a public document. It is only now going into the hands of a committee of one hundred which will meet some time in July for propaganda purposes.

"Each year," the report says, (I am just picking at random) "518,000 new cases of syphilis go to doctors, and more than half a million more resort to self-medication or quack treatment." I might say that the evidence upon which that statement is based, as given in the report itself, is to my mind lacking in probative power. I cannot see the burden of evidence for that generalization in the proof as submitted in the body of the report itself.

"As a nation, we are doing vastly less to prevent suffering and to conserve health and vitality than we know how to do through tried and tested methods." Do you as medical men accept that statement? Of course, if you measure the extent of medical care in terms of per capita expenditure, if you omit from the whole question of medical care those vast contributions which medicine itself is making, freely, graciously, and generously, and which the hospitals are making, especially those hospitals where there is contributed service; if you omit all that from medical care and you organize your budget on the basis of the cost of commodities you are bound to reach conclusions that sound suspiciously like the generalizations I have just quoted. We know that is not the way in which medical care is being given today. We know that for every patient who comes and pays his way into a hospital, there are often as many patients, and in some localities twice as many patients, being accepted in our hospitals without any charge whatsoever. What I say of the hospitals is true, in many localities, of the doctor himself.

"The committee is convinced that current activities are inadequate to assure the population of the state such care of body and mind as they can and should have." A second thought behind this is the assumption, and it is a calm assumption in the report, it runs throughout the entire report, that planning will necessarily reduce the mortality rate and disease incidence. I wonder whether any of

you could think along these lines. Where is the professional capacity, the professional ability of the medical man, which we know the government assumes, perhaps, but upon which no stress whatever is being laid? A magnificent undertaking which has a direct bearing upon this question of medical economics is one which the medical societies themselves have directed in the course of the last few years. I refer to the intensified programs of medical education of the physician, particularly in the rural areas.

Thirdly, there is an assumption that the government can do more in the field of medical care than the organized medical profession has done. Obviously this is a violent assumption, utterly without proof. In those areas where the government has already attempted the giving of medical care, much still remains to be desired, and I have a suspicion that in the course of time much more will remain to be desired.

I wanted to comment briefly upon another very important factor, which has developed in the course of the last year, and that is Dr. Peters' report. Perhaps the one thing we can say by way of a brief summary of the situation as it stands at the present moment is this; that, whether Dr. Peters intended or not, undoubtedly the report which was handed in by him and by his committee of 470 odd doctors has been taken as a revolt against organized medicine. We know that Dr. Peters himself has enunciated he does not intend this to be a revolt. We know he himself has come out on several occasions, in print, as well as by the spoken word, and has insisted that he was simply trying to bring certain problems before the American Medical Association and before the medical profession, but as one reads the report in the light of Dr. Peters' own statement, I would say that he has said either too much or too little. He has said too much insofar as calling attention to perfectly obvious and incontrovertible points, or he has said entirely too little if the report was intended to be a program for the further socialization of medicine. You and I will agree that the health of the people is a direct concern of the government; but why say that unless there is some meaning behind that statement, some meaning which none of us has thus far, or, rather, many of us have thus far not been prepared to accept? We will agree that the national public health policy directed toward all groups of the population should be formulated. What does the report, therefore, mean? If Dr. Means' pronouncement before the New York Academy of Medicine is an interpretation of this document, then I see a great deal of meaning in it. If, on the other hand,

Dr. Peters will not accept the interpretations put upon it by Dr. Means (that it is a revolt against organized medicine), then I cannot understand what that report means.

It seems to me, it is still a far cry between the idealism of Miss Roche's and Dr. Peters' reports and those magnificent traditional principles which have been laid down by the American Medical Association as its ten points. I must come back to them, because no matter what charge of vagueness may be hurled at the American Medical Association, it cannot be said that it has sidestepped the formulation of principles, and it is these principles, I believe, which have actuated American medicine today. The patient is still the focal point of the physician's interest. The patient still maintains the personal relationship between himself and the doctor. Only the doctor can carry certain responsibilities. We must recognize the fundamental fact that, ethically speaking, a divided responsibility is no responsibility, and it is only when we can succeed in fixing responsibility, and focusing and concentrating it upon one individual, that we can obligate the doctor, in conscience, to continue giving the best possible care to his patients.

HYPERTROPHY OF THE LIGAMENTUM FLAVUM AS A FACTOR IN THE PRODUCTION OF LOW BACK AND SCIATIC PAIN

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INTRODUCTION

The patient with low back pain, particularly that which radiates into the distribution of one or both sciatic nerves, presents a most perplexing problem. Such conditions as arthritis of the spine, spondylolithesis, fracture of the spine, sacroiliac strain, pathologic changes in the pelvis or rectum with radiation of pain in the sciatic distribution and sciatic neuralgia, are the most common factors in the production of such symptoms. However, it is the purpose of this paper to discuss another clinical entity which can and does produce such pain and symptoms of compression of the cauda equina, namely accentuation of pain on coughing, sneezing and straining without relief when the recumbent position is assumed, and motor or sensory loss, atrophy of the extremity, absent Achilles reflex, impotence and difficulty with control of the vesical and rectal sphincters.

HISTORICAL REVIEW

Elsberg¹ in 1913 reported a case of hypertrophy of the ligamentum flavum in a patient who was thrown from an automobile. Towne

and Reichert² cited two cases in 1931 and Puus-epp³ described three cases in 1932. Abbott⁴ reported one case in 1936, Spurling, Mayfield and Rogers⁵ cited seven cases in 1937, and Brown⁶ reported a like number in the same year. Hampton and Robinson⁷ collected five cases in 1936 and 1937, and Flothow⁸ recently reported a case. Naffziger⁹ and his associates have written extensively upon the anatomy of the ligamentum flavum and cite a number of cases in association with rupture of the intervertebral disc. It is obvious that this condition is becoming recognized more frequently, but still it is rare enough to call attention to a more detailed description of this clinical entity.

ANATOMY

The ligamenta flava stretch across the posterolateral aspect of the spinal canal between the laminae. The ligaments are composed of yellow elastic tissue which are attached to the anterior aspect of the superior laminae and the posterior surface of the inferior laminae. The two ligaments of each interlaminar space fuse in the midline and extend laterally to form the posterior margin of the intervertebral foramina. The ligament is normally observed during laminectomy and is usually from one to four millimeters in thickness. Spurling, Mayfield and Rogers dissected forty cadavers and found that the average thickness of the ligamenta flava of the fourth lumbar interspace is 4.4 millimeters. Thus when an enlarged ligament varying from one to two centimeters in thickness is found at operation, it is obvious that this is indeed a pathologic condition and is of sufficient size to exert compression of the fibers of the cauda equina.

ETIOLOGY

Most of these patients present a history of injury following lifting or falling. However, a possible inflammatory process must be borne in mind because of the thickened laminae above the ligament as mentioned by Spurling and Flothow and observed by the author in two cases. Trauma is the most plausible factor because of the association of a ruptured intervertebral disc as seen by Brown, Hampton and Abbott. It is interesting to note that in three of the cases which are being reported, the patients gave a history of falling upon the buttocks; one was injured while swinging at a golf ball, one suffered a severe pain in the radiation of the right sciatic nerve after lifting a heavy table, and the other patient was a coal miner who may have received many minor injuries to his back. Brown mentions that in one of seven cases, the patient fell

upon the buttocks, and Spurling stated it was most common in seven cases to give the history of "while lifting heavy objects, I felt a severe pain in the lower part of the back." In two of his cases there was a gradual onset with no history of a sudden acute attack. Flothow gave no evidence of trauma in his patient, and stated that there was a gradual onset of the pain. Elsberg's one case was that of a woman thrown from a car ten months prior to her operation. She suffered from pain in the back with a radiation over the distribution of the fourth lumbar root on the right, and laminectomy revealed the ligament compressing the cauda and the fourth lumbar root. Towne and Reichert cite one case of a laborer who may have received minor back injuries, and their other case was a housewife who denied any evidence of trauma. Hampton does not state definitely the type of injury which his patients sustained.

SYMPTOMS

There is usually a low back pain with or without remission and in a comparatively short time, there is a radiation into the distribution of one or both sciatic nerves. Subjective and sensory loss, and a history of impotence and sphincter disturbance is not uncommon. The Achilles reflex is most frequently absent. The presence of a complete or partial block when a spinal needle is inserted into the subarachnoid space below the fourth lumbar vertebra is of significance and in most instances the total protein content of the cerebrospinal fluid is definitely increased. In-

jection of lipiodol indicates the characteristic notching or complete block when the patient is observed in the supine position under the fluoroscope and when roentgen films are taken. The

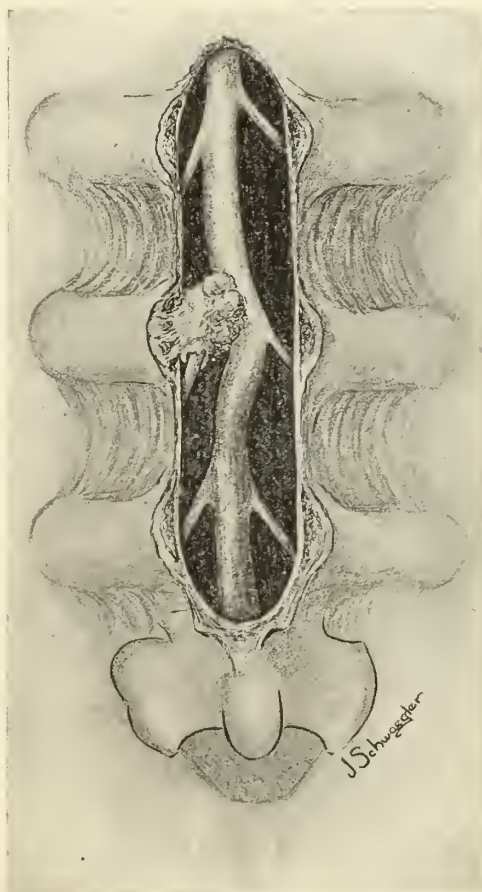


Fig. 2. Illustrates the position of the hypertrophied ligament compressing the dura and fourth lumbar root.

pathologic anatomy reveals a thickened ligament varying from eleven to fifteen or thirty millimeters, and the microscopic section demonstrates elastic tissue with a marked amount of fibrous deposits.

CASE HISTORIES

Case 1. A white female, twenty-three years of age, suffered pain in the left hip, buttock and thigh of seven months' duration following a fall on the left buttock while alighting from a car in April, 1935. The application of a sacro-iliac belt and epidural injections of novocain failed to afford relief from pain. A general physical examination on October 29, 1935, was negative, and neurologic examination revealed an absent left Achilles reflex. Spinal fluid study showed an increase of globulin and partial subarachnoid block. Injection of lipiodol revealed a notching on the left between the fourth and fifth lumbar



Fig. 1. Illustrates notch between fourth and fifth lumbar vertebrae on left after lipiodol injection.

vertebrae, and on February 26, 1936, laminectomy demonstrated a hypertrophy of the liga-

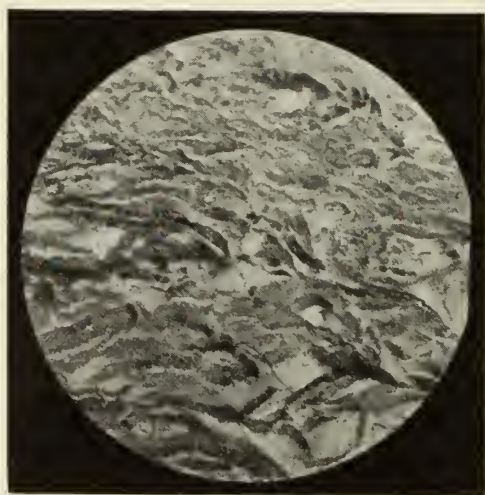


Fig. 3. Low power magnification illustrating large amount of fibrous deposits in elastic tissue.

mentum flavum, two by two by one and one-half centimeters, compressing the dura and fourth lumbar root. The patient made an uneventful recovery and was free from pain upon dismissal sixteen days later. She remained free from pain



Fig. 4. Illustrates ligamentum flavum after removal in two parts.

except for a dull backache which was present only upon marked fatigue.

Case 2. A male, fifty-two years of age, was driving a team of plow horses when they ran away entangling him in the reins and dragging him forty rods on his buttocks, on September 7, 1937. The patient immediately suffered from severe pain in the left hip, buttock, thigh and leg, which was not relieved by three weeks of traction and bed rest. Examination was negative except for an absent Achilles reflex and numb-

ness over the outer surface of the left leg and dorsum of the foot. Spinal puncture revealed an increase of globulin and partial subarachnoid block when the needle was inserted between the fifth lumbar vertebra and the sacrum. Injection of five cubic centimeters of lipiodol indicated a characteristic notch between the fourth and fifth lumbar vertebrae on the left. Lami-



Fig. 5. Illustrates notch between fourth and fifth lumbar vertebrae on left after lipiodol injection.

nectomy demonstrated hypertrophy of the ligamentum flavum, one by one and one-half by one centimeter, on November 10, 1937. The patient made an uneventful recovery and on January 15, 1938, examination was normal.

Case 3. A male, forty-four years of age, while swinging at a golf ball in April, 1937, felt a sudden pain in the back which radiated down the right leg. This became progressively worse until January, 1938, when the patient could not obtain comfort in any position. Examination revealed a loss of strength in the right lower extremity with an absence of sensation over the outer surface of the leg and dorsum of the foot. The right Achilles reflex was absent, and there was a marked tenderness over the sacro-iliac region and entire course of the right sciatic nerve, with a definite list to the left when the patient was standing. Spinal puncture revealed a partial subarachnoid block and no increase in total protein content of the cerebrospinal fluid. Upon injection of five cubic centimeters of lipiodol at the first lumbar interspace, a notch was demonstrated

by fluoroscopic and roentgen examination of the fifth lumbar and first sacral vertebrae on the right. A hypertrophied ligamentum flavum, one and one-half by one centimeter, and herniated



Fig. 6. Illustrates defect between fifth lumbar and sacrum after lipiodol injection.

nucleus pulposus were removed on January 14, 1938, with complete relief from pain and, at present, strength and sensation are returning to this extremity.



Fig. 7. Illustrates notch on lateral view after lipiodol injection.

Case 4. A female, thirty-eight years of age, fell on a stairway landing on the right buttock in August, 1936. There had been pain in the right leg which became worse to the extent that the patient would be awakened after sleeping for two or three hours. Examination was negative and, on January 15, 1938, spinal puncture established no evidence of subarachnoid block, but when five cubic centimeters of lipiodol were injected into the first lumbar interspace a filling

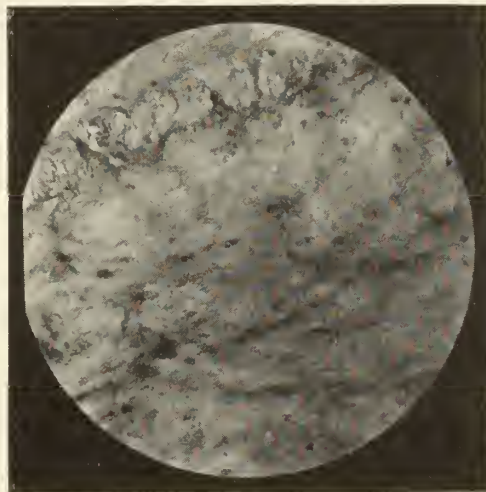


Fig. 8. Low power magnification of nucleus pulposus.

defect was found between the fourth and fifth lumbar vertebrae, and on January 21, 1938, a hypertrophied ligamentum flavum 1.2 by 1.0 by 0.5 centimeters was removed. The patient was discharged fourteen days later entirely free from pain.

Case 5. A male, forty-nine years of age, a miner, complained of pain in the left hip, buttock and leg of three months' duration. There was no definite history of injury and traction had failed to afford relief. On March 30, 1938, injection of five cubic centimeters of lipiodol revealed a typical notch between the fourth and fifth lumbar vertebrae on the left. A hypertrophied ligamentum flavum one and one-half by two centimeters was removed on April 6, 1938, and the patient has been free from sciatic pain since then.

Case 6. A female, forty-seven years of age, complained of backache and pain in the distribution of the right sciatic nerve for several years but since the lifting of a heavy table in November, 1937, the pain had been more severe to the extent that she could not obtain relief in any position. Traction and epidural injection of novocain did not afford relief, and although roentgenograms revealed a scoliosis of the lumbar ver-

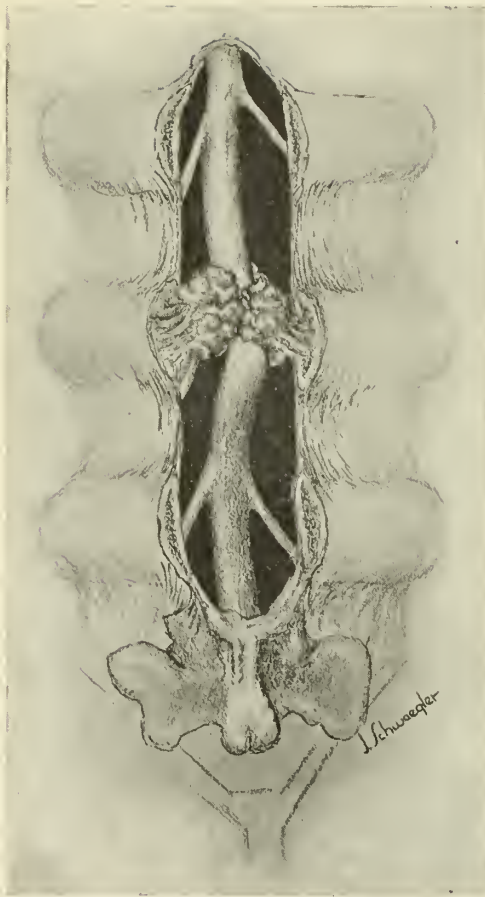


Fig. 9. Illustrates compression of dura by hypertrophied ligament across entire dural sac.

tebrae, it was felt that a hypertrophy of the ligament might be a factor because of an absent left Achilles reflex. Lipiodol injection revealed the characteristic notch between the fourth and fifth lumbar vertebrae and on April 8, 1938, a hypertrophied ligamentum flavum one and one-half by three centimeters was found compressing the

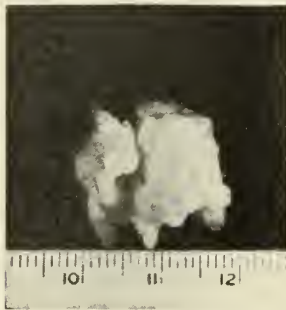


Fig. 10. Illustrates ligament after removal.

left fourth lumbar root and at the same time a spinal fusion was performed by Dr. L. M. Over-

ton. The patient states that she is free from her severe sciatic pain.

OPERATION

The treatment consists of laminectomy with removal of the hypertrophied ligament and if there is a rupture of the intervertebral disc on the anterior surface of the spinal canal, this should be removed. Four patients in this report were dismissed in twelve to fifteen days following laminectomy and removal of the hypertrophied



Fig. 11. Illustrates ligament after removal.

ligamentum flavum, while Cases 5 and 6 are still in the hospital at the time of this report. In only one instance was a ruptured intervertebral disc associated with the hypertrophied ligament which produced compression of the caudal fibers. The patients all achieved immediate relief from pain and showed a definite improvement, although there was some low back pain when they subjected themselves to unusual exertion or complained of fatigue.

SUMMARY

Hypertrophy of the ligamentum flavum is a definite clinical entity producing pressure upon the fibers of the cauda equina, and when there is a history of trauma followed in the course of a few weeks to one or two years by low back pain with radiation in the distribution of one or both sciatic nerves, loss of sensation or strength, and absence of the Achilles reflex, this condition must be borne in mind.

Injection of lipiodol will definitely demonstrate a filling defect in the spinal canal and removal by laminectomy is the only procedure which will afford relief from these distressing symptoms. It must be emphasized, however, that all cases of low back pain are not the result of this condition and it is obvious that the more conservative measures should be attempted first. However, in the event of failure of improvement with the above

stated history of injury, this condition should be definitely eliminated.

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CONTACT DERMATITIS*

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Contact dermatitis is a relatively new term which, although not indexed as such in the standard textbooks on dermatology, has become popular to express those inflammatory conditions of the skin which result from external contact with an exciting agent. Much of this popularity probably comes from a tendency to shy away from the old time-honored debate, eczema versus dermatitis, which remains controversial. Most of the scientific advance made in the field of eczematous inflammation of the skin has been to emphasize the vast preponderance of the external cause, and to show the diversity of agents involved. A list¹ of all these agents so far reported has recently been published. This list was fifty pages in length.

ETIOLOGY

The exciting agents of contact dermatitis may be divided into two classes. First, there is the class of primary irritants. These substances by their nature are inherent irritants and will produce inflammation in any skin. The amount of contact tolerated before a dermatitis becomes evident will vary with the difference in normal skin, but with sufficient contact any skin will become inflamed. Most of the lipid solvents fall in this group, and gasoline may be selected as the class representative. The primarily irritating nature of these materials removes them from the realm of patch testing, unless each substance is studied in serial dilution. The second class of excitants are not

irritants to the normal skin, but involve a changed reaction on the part of the individual to the excitant. This altered reaction is popularly called allergy, a widely yet loosely used term. Controversy regarding the various phases of allergy still exist, but at the present time I feel we should emphasize the differences between contact and atopic allergy. We would be further ahead, from the standpoint of general understanding, if a term other than allergy, which popularly connotes the atopic condition, had been used to express this altered reaction.

Atopic allergy, as exemplified by hay fever and asthma, is an hereditary state of tissue reactivity, which operates predominantly in the child and young adult. Its incidence tends to decrease with age. On the other hand contact allergy, to the best of our present knowledge, does not depend on an hereditary allergic strain. It is not predominantly operative in early life but tends to increase with age. Atopic allergy is generally conceded to be an antigen-antibody reaction. The mechanism of contact dermatitis differs in that antibodies have never been demonstrated. We theorize that they are present but remain fixed to the tissue cells. However, this theory has not been proved. The excitants of atopic allergy are often proteins, or material of complex molecular structure, antigenic and often water soluble. The excitants of contact allergy are usually of simple molecular structure, often elemental, oil-soluble plant material and are non-antigenic. We will not consider Landsteiner's hapten, and similar theories here. In the manner of testing, the scratch and intra-dermal tests with immediate urticarial reaction constitute the procedure of the antigen-antibody reaction in atopic conditions. It has no significance in contact dermatitis. The patch test is the test procedure of contact allergy. This test has been known for over forty years, but only recently has come into frequent use in this country. The technic of the patch test has been published many times. Briefly it is the application of the substance to the unabraded skin, protected by a bit of cellophane or similar material, and held in place with adhesive tape for twenty-four or more hours. The reaction may be present in twenty-four hours or it may appear several days after the removal of the test material. The reaction should be papular or vesicular to be significant. Simple as the test is, it requires some experience in interpretation and application and its shortcomings must be borne in mind. We call attention to the following facts in connection with patch tests.

The material must not be a primary irritant in the strength used for testing. In everyday prac-

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

tice we encounter many materials with whose properties we are not familiar. In this case, a patch test with the material, simultaneously applied to your own skin is valuable. You will find many instances in which your own skin reacts to the substance and therefore this substance is probably a primary irritant. If there has been exposure to this substance, it is likely the cause of the dermatitis, but it is not on an allergic basis. The skin to which the patch is applied should be absolutely normal. The inflamed skin is in a state of heightened irritability and will react to many irritants which will be tolerated by the normal skin. The sensitivity may be sharply limited to certain skin areas. In this instance, patch tests performed at a remote site will be negative. In general, we attempt to use skin for testing which is close to the area of involvement, but which is still normal, non-inflamed skin. A positive reaction to a substance by patch test, to be significant etiologically in the eruption under consideration, must be accompanied by a history of exposure or possible exposure to this substance. Negative patch tests with a material do not absolutely eliminate this material etiologically. We mentioned that sensitivity may be localized. More important, such factors as repeated minimal exposure, friction, perspiration, temperature, and other factors of natural exposure are not exactly duplicated in the patch test. This is especially true of many of the more chronic industrial dermatoses. In general, an acute vesicular dermatitis is accompanied by strongly positive and conclusive patch tests. It is possible to produce a severe exacerbation of an eruption by patch test, but this is unusual. It is probably analogous to the more familiar focal flare-up of a tuberculous condition resulting from a Mantoux test. It is also possible to sensitize a patient by patch testing, and this may result in serious trouble in the future. This too is unusual and may be disregarded in the practical management of contact dermatitis, but its potentialities, especially with arsphenamine, should be remembered.

We will give an arbitrary classification of contact agents for the purpose of brief comment. In my experience, the most common group is composed of drugs used as applications to the skin. Some of the most severe widespread cases of dermatitis we see often have their origin as some minor eruption to which inappropriate local medication has been applied. Often this is the primary plaque of pityriasis rosea to which fungicides are applied on the mistaken assumption of ringworm. As the eruption spreads, further applications not infrequently result in a generalized exfoliative re-

action. Any medicament we use on the skin is capable of causing trouble in some individuals and, for this reason, every patient for whom we prescribe applications should be watched for tolerance. This applies even to five per cent ammoniated mercury for the insignificant impetigo. The patient with skin disease can be overtreated easily, but can never be watched too carefully. Drugs which are frequent sources of widespread and intractable dermatitis are those possessing local anesthetic properties, benzocaine, nupercaine, butesyn picrate and similar preparations. Quinine and resorcin are other drugs to which a high degree of sensitivity is not infrequent. Patch tests with these materials are usually strongly positive and conclusive.

Plants, bushes, and vegetation of various types are common sources of seasonal dermatitis. The *Rhus* family usually produces a bullous eruption which, with its linear streaks is often diagnostic. So many agents of this variety have been reported that we regard almost all plants as potential offenders. Pollen may produce a fairly characteristic seasonal dermatitis of the exposed parts. The common ragweed is the principal offender in pollen dermatitis, while the giant ragweed is an infrequent source of trouble. The dermatitis producing factor in the ragweed pollen is species specific as contrasted with the water-soluble atopic excitant of hay fever. Patch testing is usually successful with this group.

Occupational sources are a large group, in themselves the subject of massive volumes. The more chronic types of occupational dermatitis often give negative reactions to patch tests. Another group might be labeled obscure sources. This would include such things as newspaper ink, leather, beef fat, and other infrequent and obscure excitants. The solution of these cases will depend on the tenacity and ingenuity of the physician together with the opportunity of prolonged and repeated observation of the patient in his various phases of eruption.

There are factors which predispose to contact dermatitis. Certain hereditary and congenital skin types, such as the ichthyotic, the seborrheic, and blonde skins, all may develop irritative inflammation more readily than other types of skin. In addition to these, there is the type of individual of whom we sometimes speak as predisposed, or some similar vague term; the individual with multiple polyvalent sensitivities and an unstable skin which tends to erupt on the slightest provocation and takes months to return to normal. The fundamental biochemical factors which underlie this allergic contact reactivity are entirely unknown.

It is possible that we may find it related to the mineral metabolism, and occasionally therapeutic effort directed along this line is helpful. General physical, blood, urine, endocrine, and other special examinations do not shed light on these phases, and seldom give information of value to the contact dermatitis. Foci of infection have been said to lower the threshold for cutaneous irritants, but scientific information along this line is still lacking.

CLINICAL CONSIDERATIONS

Clinically contact dermatitis shows just diffuse inflammation of the skin which may vary between extremes of simple erythema on the one hand to actual necrosis on the other. The average case shows diffuse swelling and erythema surmounted by papules and small vesicles. The localization will vary with the contact agent encountered, but in spite of this variation, the distribution is very important. When the eruption is widespread, the history should emphasize the areas of first involvement and manner of spread. This will usually give clues for etiologic investigation. We call attention to several characteristics which should be remembered. The hands during the course of twenty-four hours touch almost every skin area of the body; however, the face, and especially the eyelids, are one of the most common sites of secondary involvement from this vector. A dermatitis when first seen by the physician may have been initiated by an agent entirely different from that responsible for its continuation. The cutaneous threshold may be initially overcome by some unusual contact which is not repeated. The skin, then in a state of increased irritability, may continue to be inflamed by contact with agents not sufficiently irritating to affect normal skin. The subjects of contact dermatitis frequently present a polyvalent contact sensitivity. For this reason, each attack in a long history of previous trouble need not have been caused by the same agent. Following the healing of a severe dermatitis, the skin may remain hyper-irritable for varying and sometimes prolonged periods and the threshold for cutaneous irritation is lower during this time.

DIFFERENTIATION FROM ATOPIC DERMATITIS

The diagnosis of each case of contact dermatitis, with its divergent differences in localization and clinical manifestations, will raise individual differential problems. We will consider just the differentiation from disseminate neurodermatitis, or atopic dermatitis, a term which is now popular. Typically, this disease is the adult projection of an infantile eczema which is characterized by a dry leather-like thickening of the skin on the face,

neck, shoulders, antecubital and popliteal flexures. Atopic disease in the form of asthma or hay fever is often concomitant or it is present in the family. This typical form may be recognized at a glance, but there are many variations, exacerbations of swelling, oozing, and extension from the typical sites of localization. Atopic disease may be absent and the picture, in general, may lack the clear cut characteristics. In this situation, it may be of advantage to run a series of scratch or intradermal tests and simultaneously, patch tests with common eczematogenous substances such as turpentine, quinine, resorcin, etc. The atopic patient, with the exception of a few specific substances such as potassium iodide, potassium arsenite and nickel, gives negative patch tests with greater frequency than the general run of normal patients, while the patient with the contact disorder tends toward a polyvalent contact sensitivity. On the other hand, reactions to percutaneous tests tend to be frequent in the atopic patient, but not in those affected with the contact condition. These substances used for testing, both percutaneous and patch, are a routine selection. No attempt is made to correlate them with the history, but they are performed for the purpose of placing the case in the proper category after which study may be directed along appropriate lines.

TREATMENT

The treatment consists essentially of avoiding contact with the exciting agent or other sources of irritation, and topical applications of wet packs, watery lotions or pastes which are soothing and protective in nature. The addition of active antipruritic agents is usually not necessary or advisable. When it is impossible to avoid the cause, as with pollen dermatitis, treatment is unsatisfactory. Desensitization methods are unsuccessful with the possible exception of the plant oils, and results with these do not create enthusiasm.

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Discussion

Dr. Maurice H. Noun, Des Moines: The subject of contact dermatitis should be of extreme importance not only to the doctors in the industrial centers but also to the doctors in the farming communities where frequent contacts with plants, animals, insecticides and caustics are frequent causes of trouble. Eller and Schwartz, in a recent article on industrial dermatoses pointed out that sixty per cent of the industrial diseases, not including accidents, were due to skin diseases. The statistics were gathered from several large industrial states over a period of years. This large figure should make us realize the vast importance of this subject of contact dermatitis. We

can reduce this large number in several ways. We can protect the worker by means of protecting garments. We can also do this by means of protecting ointments over the exposed parts. We can also help the individuals who are exposed to extremely irritating substances by means of eliminating the very irritating substances and substituting the less eczematous materials. Proper hygiene is important as well as good ventilation which removes irritating dusts and vapors.

Sulzberger and Rostenberg, Jr., have done a great deal of work toward the compilation of a sensitivity index, and when this becomes a practical procedure it will aid us in determining the substances which are most frequently the cause of contact dermatoses. It will also aid in predetermining the fitness of men toward certain occupations. However, the most important service will be rendered to the manufacturers so that they will be able to eliminate the very irritating substances and those which have a high sensitivity index and, in their place, they will be able to substitute the chemicals and other substances which have a low sensitivity index.

Dr. Frank has pointed out the extreme value of the patch test, and I again wish to state that the patch test should be considered as a valuable aid in determining the etiologic substances in eczematous contact dermatitis. However, one should remember that it is not specific and it is not diagnostic in all cases, for we all see a certain percentage of individuals who have an extremely irritable type of skin, and they may possess a polyvalent sensitivity. As a result, they are going to react to a number of substances which will not affect people with normal skins. I have seen patients who have developed contact dermatoses of the industrial type, and although they changed their occupations and refrained from coming in contact with the specific agents, they had relapses at times when they came in contact with other irritating substances. Once they develop this susceptibility, it seems as if the skin loses its resistance and this makes it much more susceptible to nonspecific irritating materials.

It is also well to remember that, even though a patient may be sensitive to a specific agent, reaction to a patch test may be negative, for, as we know from our immune dermatologic studies, the process of hypersensitiveness runs an extreme course, from extreme hypersensitivity to the refractory or non-sensitive state; so that, when a patient is tested during this refractory state, the reactions to the patch test will be negative.

Dr. Ruben Nomland, Iowa City: Contact dermatitis is the most important form of dermatologic eruption of the eczematous group. I could only echo the statements Dr. Frank has made to you, and the only thing I am going to do is to try to emphasize a few points that he made. The general term and the overworked word "allergy" is used so often that it has come to mean nothing, and we can say that atopic eczema is one form of allergic reaction in the skin; that contact dermatitis is a second form; that atopic eczema is associated with asthma, hay fever,

and is a disorder of childhood; and that contact dermatitis is unassociated with any atopic condition and is a disorder that tends to increase with the age of the individual.

The second thing I wish to tell you or emphasize to you about contact dermatitis is that, in spite of the fact that the locations may be extremely varying, such as the face, the hands, the genital area, the axillae and the neck, it has certain characteristics that set it off from all other forms of dermatitis. The essential characteristic is that the dermatitis from contact substances has a tendency to localize on areas that can be exposed directly or indirectly to irritating substances; secondly, that it localizes in areas that are usually spared by other forms of dermatitis, particularly the atopic form of dermatitis.

There should be no difficulty in diagnosing contact dermatitis without the use of the patch test. Sit down and talk to an individual; listen to him talk. Have him tell his story over and over again. If there is anything I could say that would help you in the diagnosing of contact dermatitis, there are two: first, the history of acute exacerbations with more or less complete remissions following, of course, the contact. The second is that the patient will frequently remember the exact date at which the dermatitis started, and, practically speaking, it is only in contact dermatitis when a patient will remember these facts.

Dr. Frank said nothing about treatment. Therefore, I am going to tell you a few things about treatment that may not agree with his idea. The most important thing is, of course, to find the cause, either by your history or other methods. After the cause has been found, then that cause must be avoided, because, at least in my personal opinion, there is no such thing as desensitization to contact substances. The second thing is to treat the patient symptomatically for the dermatitis. That may include wet dressing for the hyperacute varieties of dermatitis; soothing, simple ointments for the less acute; and, naturally, of course, the avoidance of simple nonspecific irritation, that is, the avoidance of soap, water, occupational irritants, and whatever else might be a factor in the dermatitis.

I wish to congratulate Dr. Frank for the excellent presentation and differentiation of the common forms of dermatitis. I wish to emphasize the fact that contact dermatitis is at least ten times as frequent as the atopic variety of chronic eczema.

THE OFFICIAL ISSUE

Attention of our readers is called to the fact that this issue of the JOURNAL carries a complete roster of members of the Iowa State Medical Society in good standing for the year 1938. In addition there will be found a full transcription of the minutes and transactions of the House of Delegates during the last annual session. We suggest that each reader retain this issue; it should make a valuable reference volume.

FRACTURE DISLOCATIONS OF THE LOWER SPINE

A Method of Reduction

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Hyperextension is not a cure-all for injuries to the spine. There is no logic in suggesting, as has recently been done, that whoever first sees a patient with a suspected back injury should carry out this maneuver, nor that patients should be so handled as to increase or produce hyperextension in preparation for or during transportation. Such uncontrolled and undirected manipulation is quite as dangerous as increased flexion, just another unwarranted set of motions to torment the injured

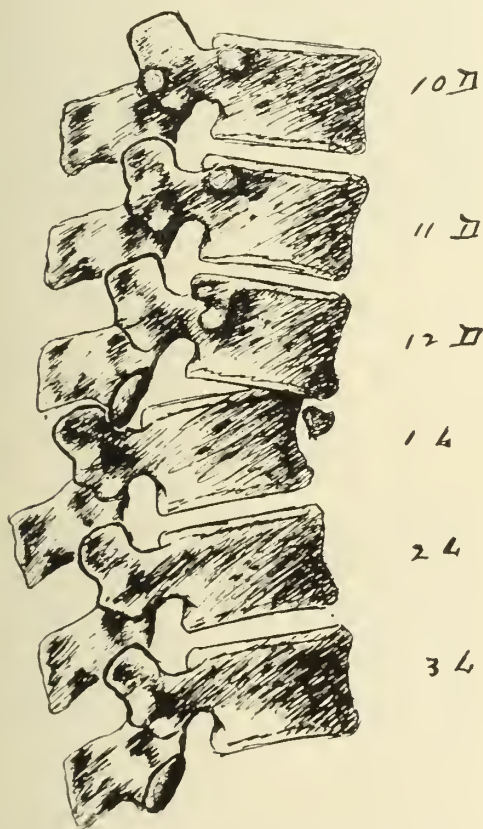


Fig. 1. Showing dislocation as the main factor. The right lower articular process of the twelfth thoracic vertebra is locked in front of the upper right articular process of the first lumbar vertebra. The small chip from the upper anterior lip of the body of the first lumbar vertebra is common and not important. Greater force would have produced the characteristic compression of the body of the first lumbar vertebra.

and aggravate the risk. An articular process, displaced forward by the accident, may be forced backward and downward, if reduction has not been first accomplished, to impinge the cord or nerve roots with disastrous results. Fortunately most fractures of the spine are simple compressions which hyperextension cannot further impair, while those with dislocation of the articular

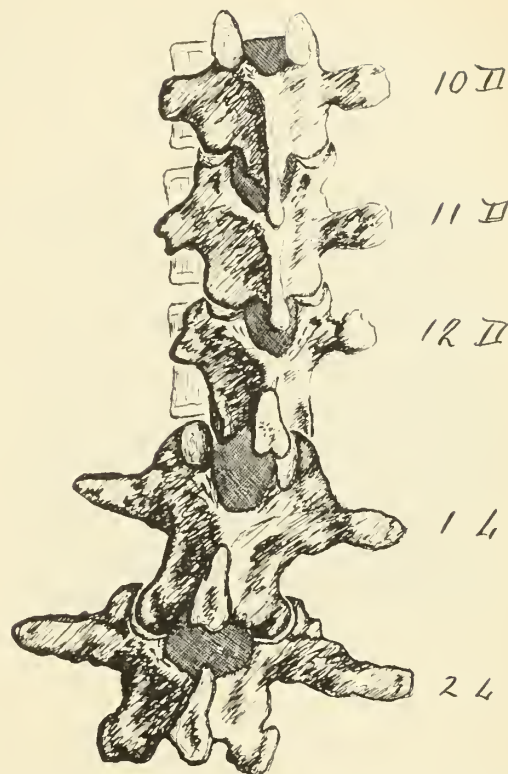


Fig. 2. Demonstrating dislocation of the twelfth thoracic vertebra forward on the first lumbar vertebra. The lower right articular process of the twelfth thoracic vertebra is anterior to the upper right articular process of the first lumbar vertebra, and is locked in this position. The vertebrae above the lesion are rotated; there is angulation and right lateral deviation of the spinous processes.

processes, which might be made worse, are only a small proportion of the number of such injuries.

There is a tendency in injuries to the spine for the parts to resume the normal relationship.¹ Maximum deflexion occurs at the moment of impact, the parts thereafter springing back until the



Fig. 3. Lateral view showing marked anterior displacement of the twelfth dorsal vertebra on the first lumbar vertebra. The anterior position of the articular processes of the upper vertebra was not visible in the illustration as it was in the film.

return is checked by bony impingement or the returning force is exhausted. Hence it is likely that in most instances the x-ray examination does not reveal the maximum displacement, but only that



Fig. 4. Illustrating angulation, lateral deviation and rotation. The articular facets do not interdigitate.

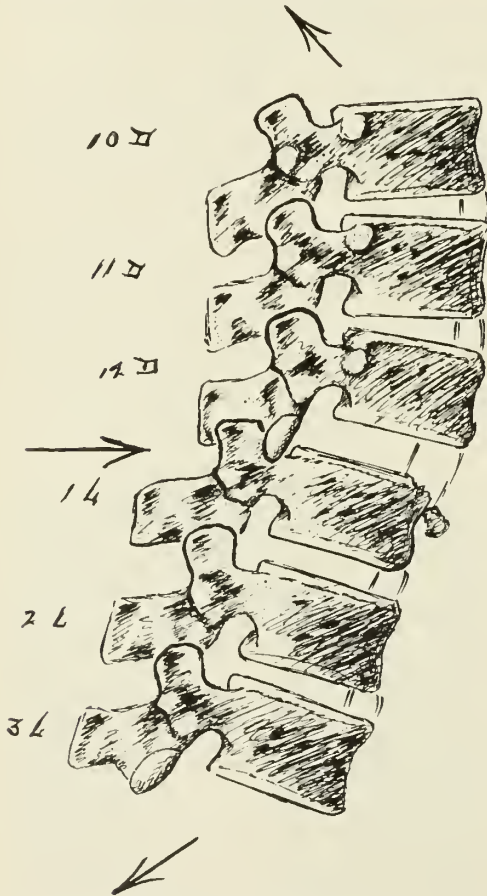


Fig. 5. Attempts at reduction by means of traction and hyperextension are likely to fail if the articular processes are intact. The lower articular processes of the upper vertebra lock in front of the upper articular processes of the vertebra below. The greater the force exerted the greater the pressure maintaining the displacement.

displacement to which the parts have returned. This applies with equal force to compression fractures of the body of a vertebra and those with dislocation. It is at the time of maximum displacement that cord damage, if any, occurs. In this lies the explanation for marked persistent displacement without cord damage on the one hand,

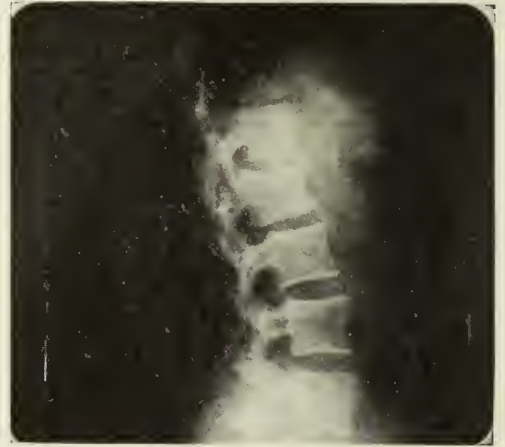


Fig. 6. Lateral view showing apparent almost complete reduction.

or slight displacement with complete paralysis on the other.¹ In the first there has been a smaller force with less displacement from the normal position and early resistance to return. In the second there has been marked displacement, cord damage has occurred but there is less

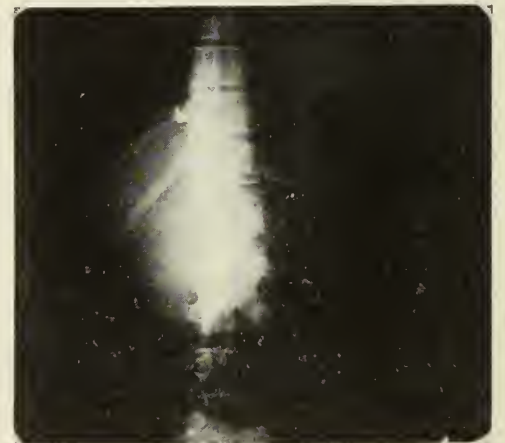


Fig. 7. Anterior posterior view after attempted reduction. Angulation is improved and the rotation corrected, but actually the situation is as bad as before the attempt. The lateral deviation is still present. Straddling is evident. The capacity of the canal is decreased at the point of the lesion.

resistance to return. When the parts have come to rest the tendency is to remain at this point, and cord damage is not likely to supervene or increase in the absence of excessive or misdirected movement. Hence patients should not be hyperex-

tended, flexed or otherwise disturbed by ambulance drivers, other attendants or anxious friends, but every effort should be made to limit all types of motion and maintain the parts in the stabilized relationship to which they have sprung back until a diagnosis has been made and the method of treatment chosen. Patients should be rolled to and from stretchers, tables and carts unless this motion elicits more pain than careful lifting. The

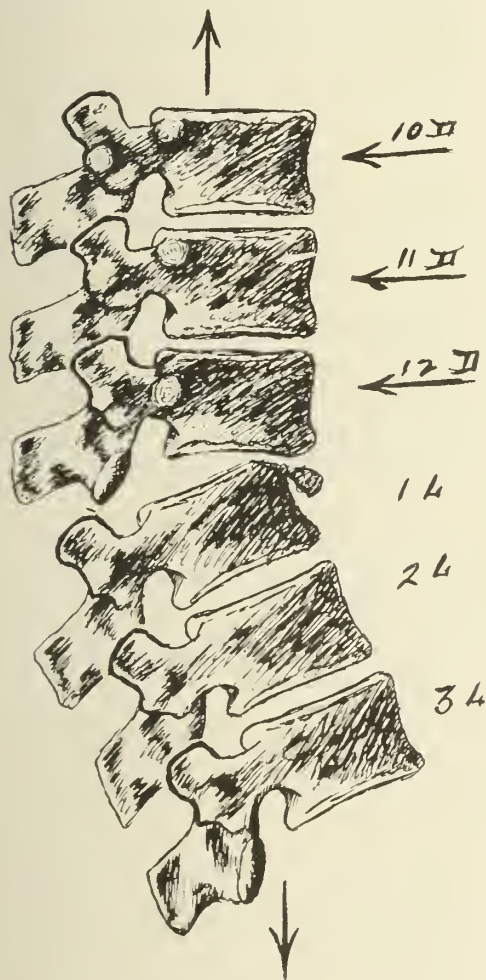


Fig. 8. Traction is first exerted in line with the axis of the spine. This causes distraction at the level of the lesion anteriorly, and prevents further damage to the body of the vertebra during subsequent manipulation. Flexion follows and unlocks the articular processes, subsequently carrying the displaced vertebra back to its proper position. When discontinued the articular processes drop into place.

patient's sensation is an excellent guide to the trauma inflicted upon him by movement. This is true even in the presence of paralysis, the nerves bearing painful sensations entering the cord above the lesion.

The reduction of the common compression fracture of the body of a vertebra presents no serious difficulty to one familiar with the treatment of such injuries. Any one of several methods of im-

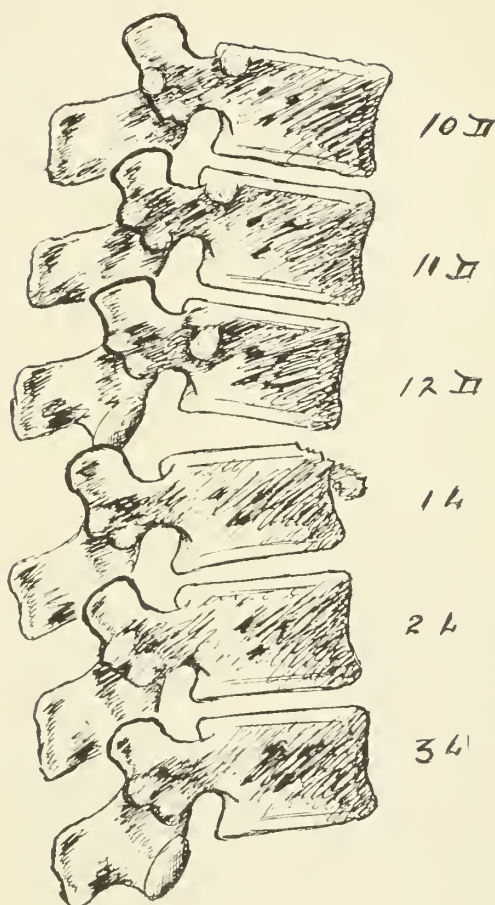


Fig. 9. Showing the process of reduction nearly complete. The processes have cleared, the anterior position of the twelfth dorsal vertebra has been corrected, and when tension of the sling is released and the patient lowered to the table the processes will occupy their normal places.

mediate or gradual expansion of the compression may be used. These are all equally effective in the reconstruction of the normal contour of the spine and the capacity of the canal. The choice of method depends upon the habit of the operator, his experience and skill with the various methods and the exigencies of the case. The reduction of marked displacements is not so simple; it may be extremely difficult. It is often impossible by the usual mechanism of hyperextension, with or without longitudinal traction. Repeated failures by this means stimulated the investigations leading to the changes in method indicated in this discussion. Whether the injury is a dislocation or fracture is not important. The displacements are similar, the differences being in the amount of damage done, the comminution and the degree of displacement. The upper vertebra is anterior to the lower, usually tipped so that a dorsal convexity of the spine, a distinct kyphos, results. There may be rotation with a lower articular process of the upper vertebra engaged in the notch at the junction of the

laminae of the vertebra below. Anterior displacement may occur alone or associated with lateral displacement. These two may be present without demonstrable rotation, but rotation is inevitable if hyperextension is produced before reduction is complete. This comes from the necessity of the articular processes clearing in the backward progress of the upper vertebra. Those displacements, regardless of the degree or direction, are most easily and completely reduced by the customary procedure in which there has been the greatest comminution. The reason is obvious. The articular processes are so badly damaged there is nothing left to impinge and hinder replacement.

Hyperextension, with or without longitudinal traction, tends to approximate the articular facets which the injury has separated. With these intact, the lower facets of the upper vertebra press against the anterior surfaces of the upper articular processes of the lower vertebra. Since the surfaces are not flat, they slip from direct contact and straddle, and lock in this position. This checks

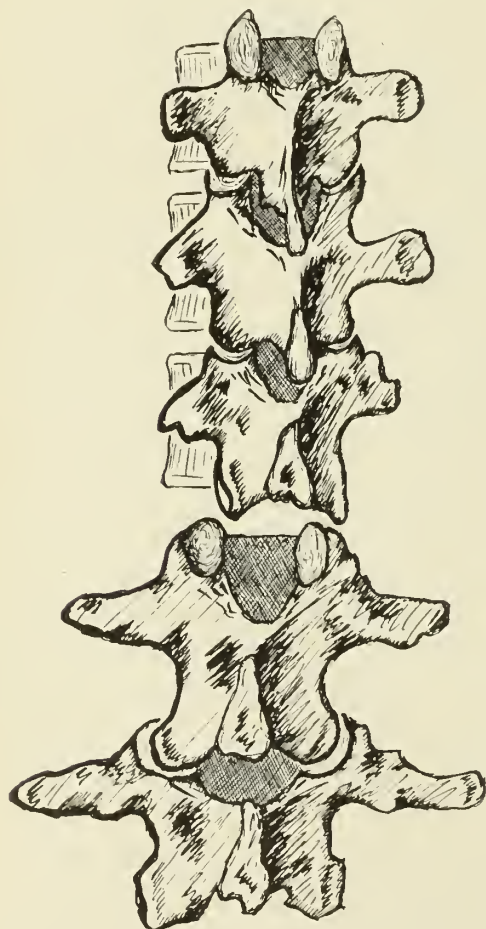


Fig. 10. Manipulation by rotation will correct this lateral displacement, traction and flexion having cleared the articular facets.

the posterior progress of the upper vertebra in its attempt to reach a normal position, and incomplete reduction occurs. X-ray examination at this point shows nearly complete return of the parts in a lateral film. However, in these injuries dependence must not be placed upon this view alone



Fig. 11. Illustrating anterior displacement of the twelfth dorsal vertebra on the first lumbar vertebra.

as may be done in simple compression fractures. The anterior posterior view reveals the absence of reduction. The lateral displacement may be increased, the straddling of the processes is evident and the lack of proper interdigitation of the articular facets is clear.

Physical examination of a patient with suspected back injury should be limited. Dependence should be placed upon the x-ray findings for



Fig. 12. Showing lateral displacement, angulation and rotation. The articular facets are not in contact.

diagnosis, and both films and interpretation must be excellent. If there is dislocation or fracture with displacement, immediate reduction should be attempted. If paralysis is present, prompt reduction is imperative. Cases have been known in which initial paralysis did not indicate complete transverse myelitis of the cord or shearing of all the nerves of the cauda equina. Complete muscular relaxation is essential. This should be maintained throughout the process of reduction and immobilization. When this has been obtained the patient is rolled to the operating table face down. Physical manifestations of the x-ray findings are now evident. There is a distinct kyphos at the level of the injury. If there is lateral displacement or lateral displacement with rotation, the spinous processes are seen to be out of line. Traction is exerted in line with the axis of the trunk. Any convenient means may be used, and it should be applied slowly. The patient's chest should rest upon a stool several inches higher than the general level of the table. This may be all that is required for reduction, the moderate flexion clearing the processes, the weight of the lower portion of the trunk correcting the anterior

the patient's chest, until the surgeon feels that the articular processes have cleared. The sharp kyphos may disappear at any time, marking the disappearance of the offset and indicating that substantial reduction has occurred. Restoration of the line of the spinous processes is essential before this is accomplished. The surgeon may find it necessary to twist the pelvis and the chest to do this and should have both of his hands free for this manipulation if it is required. The absence of the sharp kyphos and the aligning of the spinous processes are fair indications that the articular facets have dropped into place, and the patient is lowered to the table. When the maneuver of reduction appears to have succeeded,



Fig. 13. Anterior displacement has been corrected by traction, flexion and manipulation, and fixed by hyperextension.

displacement, and the longitudinal traction aligning the spinous processes. At this point the surgeon may feel the parts move into place. The snap or sound which sometimes accompanies reduction of dislocations in the cervical region need not be expected. There may be no sensation whatever in the finger tips.

If the reduction is not completed so easily, the traction is increased slowly in conjunction with added flexion, the latter most easily by means of a sling which has been previously passed under



Fig. 14. Demonstrating complete reduction by traction, flexion and manipulation. End result; bridge of callus between the twelfth dorsal and first lumbar vertebrae.

roentgenologic check-up is done. After complete reduction has been confirmed by the x-ray, hyperextension is carried to the usual degree and a trunk spica is applied. The upper and lower portions of the spica should be padded in front with felt, and two long strips of felt should parallel the spinous processes behind to relieve pressure upon these bony prominences.

SUMMARY

1. Displacements of the spinal vertebrae should be promptly and accurately reduced.
2. Marked displacements irreducible by hyperextension or hyperextension with traction, may usually be reduced by traction, flexion and manipulation.
3. The procedure is safe.

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AN IMPORTANT MEDICOLEGAL RESPONSIBILITY IN AUTOMOBILE ACCIDENTS*

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It is not my purpose in this brief discussion to pose as a critic on laboratory methods or medico-legal problems. It is my purpose to prove the necessity of more prompt, accurate, and economic methods of determining the sobriety or drunkenness of those who use our public highways.

Abraham Lincoln once stated, "Let every man remember that to violate the law is to trample on the blood of his father and to tear down the character of his own and his children's liberty; and when the victory shall be complete, when there shall be neither a slave nor a drunkard on the earth, how proud the title of that land which may truly claim to be the birthplace and the cradle of both these revolutions that have ended in that victory."

Lincoln's statement is as true today as it was when uttered over seventy years ago. In no place does this right of personal liberty apply more strongly than to the sober men, women, and children who travel our public highways. In no place does "man violate the law" more freely, "trample on the blood of his father" more carelessly, and "tear down the character of his children's liberty" more ruthlessly than does the drunken driver behind the wheel of a powerful motor car.

Who is responsible for this condition? We, who have voted the legal licensing of what Hunt¹ terms "the most important poison with which the medical man and the jurist have to deal," without adequately safeguarding it by determining a medicolegal measure for its safe administration. The voting public is largely to blame, but the legislators, the legal profession, the medical profession, and the courts as leaders in their respective fields must admit failure to control the drunken driver by lack of legal precedents, court rulings, and medicolegal standards, largely unchanged since the days of "old Dobbin and the one horse shay." In our enthusiasm to impress upon the public and upon ourselves the meaning of the words, "personal liberty," we have become so desirous of safeguarding the liberty of the person that we have become negligent of the safety of the masses. We have apparently lost sight of the fact that law is an instrument for the protection of society.

In the accurate determination of sobriety in questionable or borderline cases, the layman's and the policeman's evidence is only of corroborative value. Here the decision of the judge or the jury, to be just, must rest upon one or more clini-

cal and laboratory examinations made by scientific experts. The defendant should have no more right to choose these scientific experts than he has to select the policeman who arrests him or the judge who presides at his trial. The problem of personal privilege, self incrimination or admissibility of blood, urine, or other physical tissues or excretions, as evidence, is a legal one not considered in this discussion except to agree with a recent issue of the *Iowa Law Review*² which states, "The courts ought to openly consider the admissibility of blood and urine tests, in view of their pressing need, without being misled by legalistic snares not justified under a proper interpretation of the privilege against self-incrimination."

At present we must admit that the legal and medical professions are not in harmony in determining the line of demarcation between sobriety and drunkenness. No self-respecting attorney, physician, policeman, or layman is anxious to volunteer and to appear before a clever, unscrupulous, intimidating, opposing attorney or expert witness who has the backing of a gang of paid racketeers, determined to force a favorable verdict, regardless of facts. This condition of uncertainty of a definite measuring rod, acceptable to both the legal and the medical professions, in the determination of alcoholic intoxication or drunkenness in accident cases, is the cause of a vast amount of distrust and ridicule of both professions by the press and by the public. It also causes much needless waste of time and public funds, and the passing of many unfair verdicts which must later be repealed or reversed, and it furnishes an endless amount of childish legal horseplay unworthy of the dignity of the courts and the two learned professions, insulting to a competent police and patrol system and a trusting public, hoping for a just, economic and efficient service.

To clear this position of ill-repute of both professions, law and medicine, a little medicolegal team work is necessary in determining what alcoholic intoxication or drunkenness is legally, and what it is from a medical standpoint. It is the duty of these two professions to make this medicolegal determination acceptable and legal in the various state and federal courts, and the formula is not as simple as it first seems. For the two professions to coordinate effectively in solving a medicolegal problem of this type, a few legal terms and scientific problems, relatively simple to attorneys and physicians respectively, must be accepted and thoroughly understood by each.

Black's law dictionary defines drunkenness as follows: "A person is drunk when he is so under the influence of liquor that his passions are visibly excited or his judgment impaired, or when his

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

brain is so far affected by the potation of liquor that his intelligence, sense perceptions, judgment, continuity of thought or ideas of speech, and co-ordination of volition with muscular action are impaired or not under normal control." In Iowa, the words drunk and intoxicated are synonymous. "Under the laws of the state of Iowa, a person is in an intoxicated condition in a legal sense when he is so far under the influence of intoxicating liquors that his passions are visibly excited or his judgment impaired by the liquor."^{3 and 4}

With these legal definitions of drunkenness before us, is it either rational, just or scientific to permit the average policeman, patrolman, or layman or the average hired expert witness, to diagnose drunkenness, and the average jury, chosen to know nothing about the case, to pass judgment on the sobriety or drunkenness of one involved in a serious accident without a complete clinical examination and laboratory report by a qualified scientific expert appointed by the court? From the standpoint of scientific medicine, intoxication may be defined as that condition present when any ingested substance (whether food, beverage or medicine), producing a pathologic or toxic reaction, is introduced into the system.

Drunkenness, according to the definition advanced by the committee on tests for drunkenness of the British Medical Association,⁵ is as follows: "The word 'drunk' should always be taken to mean that the person concerned was so much under the influence of alcohol as to render himself unable to execute safely the occupation on which he was engaged at the material time." These medicolegal definitions of drunkenness have not materially changed in the past half century. An old volume of Wharton and Stille's Medical Jurisprudence,⁶ published in 1873, will prove this statement. These primitive methods of determination functioned poorly in the horse and buggy days, but fail miserably in convincing a modern court and jury.

To clear this problem and to establish the legal determination of either sobriety or drunkenness, there must be first, a definite scientific clinical examination of each person involved; and second, a definite scientific laboratory report by a competent technician to corroborate the clinical findings. The scientific clinical and laboratory groups have worked out this problem and it has been operating routinely and legally in many European countries, particularly in Sweden and Germany, and in a few of the more progressive localities in this country. Where operative, it has made accurate determinations of sobriety or drunkenness in over 98 per cent of the cases submitted, at a great reduction of

time and expense to the public, with an efficiency increase of about 50 per cent. Much credit must be given for the fine pioneer work in this line to Widmark of Sweden, the members of the British Medical Association committee, the National Safety Council committee, Heise of Milwaukee, Gunn of Ohio, Harger of Ohio, Muehlberger and McNally of Illinois, Morgan of Iowa, Harris of Alabama, Nicloux, Gettler, Bogen, Inbau, Stoltz, Friedrichs, Mehrrens, Flemming, Newman and many other fine scientific medical and legal minds of the present day.

With this army of medicolegal and scientific minds prepared and ready to deliver a scientific diagnosis that will be fool proof in 98 per cent of all accident cases, is it rational, just, fair or scientific to permit any borderline or questionable case of alcoholic intoxication or plain drunkenness to take more than a few minutes of the time of any court or jury? These tests for drunkenness have passed the stage of scientific experiment and have been thoroughly proved in the hospitals and laboratories of Europe and in a few localities in the United States. They have been accepted by the courts and police departments in Germany, Denmark, Sweden, and Switzerland, and have done more to eliminate medicolegal guesswork, unnecessary expense, and injustice in this class of cases than all other procedures combined.

Jungmichel, Widmark, and others of known authority in this line,⁷ have agreed upon the following rough scale of alcoholic content of blood and the corresponding stage of alcoholic intoxication:

"Up to 0.03 per mil.: physiologic content of blood of reducing substances (such as alcohol, etc.).

Around 1.0 per mil.: animation, high spirits, loud voice, and other well known signs of being half fuddled or on a 'social jag.'

Around 2.0 per mil.: slight to moderate severe intoxication.

Around 2.5 per mil.: severe condition of drunkenness.

Over 3.5 per mil.: usually most severe alcoholic intoxication, terminating fatally in most cases."

While most authorities agree that the level at which legal intoxication is said to be present is at 1.5 to 2.0 per mil., an individual who is subclinically drunk or who has only enough alcohol to slow up his reaction time, and at the same time to increase his self-confidence, is the greatest menace behind the wheel or on the highway. Along this line, Jungmichel⁷ further adds: "The maximum of accidents for drivers of motor vehicles lies between 1.0 to 2.0 per mil., for motorcycle riders between 1.0 to 1.5 per mil., for pedestrians

around 2.0 per mil." * * * "It has been demonstrated that a slight concentration of alcohol in the blood increases self-confidence considerably, thus increasing the factor of danger in the case of drivers of motor vehicles."

With this combined clinical and laboratory method of determination of alcoholic intoxication, drunkenness may be as definitely determined from a scientific, medicolegal standpoint as can syphilis, malaria or typhoid. Any competent physician in any locality can, by physical examination, secure a good clinical picture of those involved in any accident. This same physician can secure a few drops of blood, in triplicate, in specially prepared sterile glass containers, from the finger or the ear of each person involved in the accident, as easily as he could secure the same for a test for syphilis, diabetes or typhoid. These sterile glass containers may be examined in the nearest standard laboratory equipped for this type of work, in a few minutes or in a few days. This work can be done as quickly and efficiently as the local photographer can shoot and develop a picture of the wreckage for the local paper.

Selesnick,⁸ in his recent series of papers reviewing the work of the advisory committee on the study of alcoholism at the Boston City Hospital, sponsored by the Works Progress Administration, states: "It is important to have definite criteria as a basis for the diagnosis of alcoholic intoxication in accidents involving individuals who have imbibed alcoholic beverages. The chemical determination of body fluid alcohol offers a scientific means of establishing the degree of alcoholic intoxication. Blood as a medium for analysis is preferable to spinal fluid, urine, saliva or expired air, because it contains a negligibly small amount of non-alcoholic oxidizable material, its alcoholic content represents the degree of alcohol saturation at the moment the blood is taken, it is always available, and its extraction does not necessitate the active participation of the subject. There are sufficient data to prove that subclinical intoxication or alcoholic intoxication in the biologic sense without any gross manifestations of drunkenness can produce sufficient interference with psychomotor activity and neuromuscular coordination to render such an individual a potential public menace. Blood alcohol determinations can detect these degrees of alcoholic intoxication which ordinarily escape the detection of the ordinary physician. Criteria, therefore, must be established which include body fluid alcohol determinations as a part of the diagnostic armamentarium."

I believe I have proved to the satisfaction of any intelligent unprejudiced mind, that the medi-

cal profession, and the associated laboratories, hospitals, and scientists are prepared and equipped in each state to diagnose alcoholic intoxication in 98 per cent of the cases, quickly, efficiently and economically, if given the authority by the courts and the legislators to do so. To summarize the chief points most briefly:

1. The courts and the legislatures are about one-half a century behind the public, the police, and the medical profession in determining alcoholic intoxication.

2. The scientific medical profession can aid the courts in determining alcoholic intoxication or drunkenness in 98 per cent of the cases at about 50 per cent of the present cost if legally permitted by the courts and the legislatures to do so.

3. The Council of the Iowa State Medical Society has resolved to aid in this medicolegal determination of alcoholic intoxication.

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THE GOITER HEART*

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The heart of the goiter question is the goiter heart.

It makes no difference which of the thyrotoxic symptoms a patient complains of most, nervousness, exophthalmos, fatigability, loss of weight, etc., he can live with any or all of these. In the end, degeneration of the goiter causes his demise via a cardiac death. This evening we shall briefly consider the answers to these three questions:

1. When does a goiter bother the heart?
2. How does a goiter bother the heart?
3. What can we do about it?

In order to answer the first question we shall review the stages through which a goiter passes in its life cycle. Whichever type the goiter is in the beginning, its course is a continuous process ending in a cardiotoxic stage. This continuity can only be appreciated where goiter is endemic, since development is generally slow and any one practitioner does not ordinarily follow patients long

*Presented before the Forty-first Annual Session, State Society of Iowa Medical Women, Des Moines, May 11, 1938.

enough to see the gradual progression. Usually the goiter is first discovered by the patient. It is only when patients are routinely examined or when toxic symptoms develop early that the goiter is discovered by the doctor. Therefore, most goiters when first examined have existed for some time and have reached a more or less advanced stage. Evidence of toxicity alternates with periods when there is no toxicity. A classification of goiter simply represents the stages in the disease just as we classify the stages of lobar pneumonia or the manifestations of syphilis. We shall not discuss the rôle of thyroid tumors or those polyglandular cases in which thyroid symptoms predominate.

Most classifications of goiter are confusing in that they have been made by pathologists who have not correlated their cases with the clinical manifestations. A simple pathologic classification would be first, the hyperplastic toxic type, as is seen in Graves' disease; and second, the degenerative toxic type, which includes the non-toxic diffuse, the non-toxic nodular and the toxic nodular goiters of the classification accepted by the American Society for the Study of Goiter.

A convenient clinical classification is acute and chronic toxic goiters of Davison. The acute cases are synonymous with the hyperplastic toxic type. They are represented by Graves' disease with marked weight loss, rapid pulse, extreme nervousness and in some cases by eye signs. These symptoms may develop in a few months or less, and are obviously acute in onset. They run their course in from a few months to a year or two and later in life terminate with degenerative heart symptoms. The chronic toxic cases are synonymous with the degenerative toxic type and these require many years for the development of an obvious toxicity. They are insidious in onset and it is often impossible to say when they begin to produce their effect on the patient.

The usual way to study the pathology of a condition is to start with the normal. Unfortunately we know little about the structure of the normal thyroid gland. Beginning with a cell mass in the fetus, follicles are gradually formed somewhere near the middle of the end of gestation. In childhood many well formed follicles containing colloid are interspersed with cell masses which have not yet formed acini. In adolescence and early adult life the acini dominate the picture. There are few interacinal cell masses remaining. The acini are lined with a uniform cuboidal or columnar cell and the colloid which they contain is uniformly acidophilic when stained. In mid-life the cells are flat, and the colloid is uniformly acido-

philic. In mid-life or later in nearly all glands, the colloid tends to lose its specific stainability. The time of this change varies greatly in different persons, but when it comes the structure is then comparable with the structure of degenerative toxic goiter. The thyroid gland is not palpably enlarged; however, a fat patient may hide a goiter of a size which would be perfectly obvious in a thin person. A goiter also may be substernal and escape palpation in examination. There may be more extensive degeneration in a palpable thyroid gland than in one which is not. The size of the gland is no guide to the effect on the patient. The acinal epithelium and the state of the colloid indicate that the gland is toxic. A great variation in thyroid glands exists in persons of the same age. In advanced stages of the non-goitrogenic thyroid glands associated with degenerated epithelium are changes in the colloid until it has lost all resemblance to its normal self. In such cases there is no doubt but what that gland is functionless. These changes are identical with the change in the degenerative toxic goiter and as such must be considered in the etiology of cardiotoxic patients.

Turning now to patients with degenerative toxic goiters, we find that in the early colloid goiters there is an increase in the colloid which causes the enlargement of the gland (this may be physiologic during puberty). There is flattened epithelium. An increase in the number of acini is usually associated with the increase of colloid in causing enlargement of the gland. This may develop from one or several groups of interacinal cells and may thus form the nodules on colloid goiters. After the nodules have formed there is no recession to the normal. At an early stage of enlargement there is no evidence of constitutional disturbances, but the goiter soon begins to show definite progressive changes, which are first apparent in the tinctorial changes in the colloid before there is any demonstrable change of the acinal cells. In many colloids there are areas of apparently newly developed acini. The presence of these is signalized by exacerbation of the symptoms of toxicity. These variations emphasize the toxic changes due to cell hyperplasia and those due to degeneration.

Ultimately the entire organ becomes wholly degenerated and there remains no normally functioning gland. The rate of development varies. It usually takes decades. The beginning of the changes occur relatively early in the life of the goiter, usually long before the constitutional changes are recognized. In these degenerative toxic or cardiotoxic goiter patients the earliest stage is one in which the symptoms are not clearly defined; the late stage is that in which the neigh-

bors can make a diagnosis, so definitely is the patient suffering from a decompensated heart. There is no dividing line.

The clinical aspects of the early stages usually present themselves as more or less cardiac disturbances, increase in rate or intensity of the heart beat even to disturbance of rhythm. There may be some loss of weight, sometimes alternating loss and gain, or an increase in nervousness, perhaps a nervous breakdown of greater or lesser degree. The old family doctor considered such goiters innocent. Busy housewives and childbearing women are prone to ignore these minor disturbances in view of the persistent demands of the family. These symptoms become impressive only after their disappearance following the removal of the thyroid gland. Women compare sensations when leisure permits and discover that their neighbors and friends have been relieved of like complaints, and they seek the surgeon decades earlier than formerly. Naturally when the surgeon hears expressions of gratitude after these patients are operated upon he becomes more alert in discovering early stages of the disease.

Pathologically, the gland in this stage is enlarged, often bosselated. Usually there is an increase in density. As stated above, the thyroid gland, however, need not be palpable. The diagnosis must be made from the history and examination of the patient before the neck is investigated. The absence of a palpable gland is particularly common in plump women and husky middle-aged men. The gland is hidden by overlying structures.

The histology in this stage may be confusing. Compensatory hyperplasia may be associated with obvious degeneration. With hematoxylin and eosin stain there may be little obvious change in the colloid and if the gland is not enlarged it may be regarded as anatomically normal. When these patients show spells of toxicity this is expressed in the greater activity of the cells, but they never approach the changes of the acutely toxic goiter; they usually parallel the degree of cardiac rate and the degree of nervousness. Microscopic study will show areas of atrophied cells, and occasionally there will be acini showing a beginning basophilia. In these cases the use of other stains is necessary. With Mallory's aniline blue stain the staining of the colloid by the aniline blue is lost and the orange G stains become dominant. In acini in which the latter stain functions, the epithelium is permanently out of commission. A tinctorial study of the colloid throws doubt on the theory of acting and resting cells. The resting

cells (like the PWA workers) will never work again.

In the late stage the goiter heart justifies the name. Heart symptoms dominate; arrhythmia, dilatation, and dropsy is the usual order. The patient has the sense of exhaustion coupled with a driving nervousness. Sleep is disturbed both from nervousness and dyspnea. Loss of weight may be slight but is usually marked. Dropsy may dominate the picture if the heart is decompensated. Many of these patients have been taking digitalis for long periods without effect. The terminal stages are usually those of progressive heart failure, but sometimes there is hyperpyrexia. Pathologically there is evident thyroid enlargement, but not always as in the early stages. The gland is usually irregular in outline which means that acinar hyperplasia has been present.

Histologically there is only an exaggeration of the early stages. Usually the hematoxylin and eosin stain shows very obvious basophilic change. The epithelium is degenerated and the connective tissue has lost its typical tinctorial reaction. It has taken part in the degeneration. The aniline blue stain shows the change in the colloid at a stage when it still accepts the eosin stain. Many of the acini stain yellow with the orange G, refusing completely to take the aniline blue which characterizes the normal colloid. The evidence of degeneration is merely an extension of the process of the early stages. Cell degeneration is greater; changes in the colloid are more pronounced. The histologic study of the gland is important because it gives a check on our clinical diagnosis. If the two do not agree, we must return to the clinic to find our mistake. Therefore, the answer to our first question is that as soon as degenerative changes begin, the effect on the heart starts.

The next question is: "How does a goiter bother the heart?" Even in patients with marked decompensation, recovery may be complete after removal of the goiter. It would seem that the heart symptoms are due to poisoning from the goiter rather than to any degenerative change in the heart muscle itself. Somewhere in glands of this kind, something harmful is being produced. We know it is a toxicity of degeneration, although we cannot describe the complete process. Many of the cells are wholly degenerated. Possibly the cells continue to produce an abnormal colloid, for one sees islands of cells which seem to be exerting a feeble effort at compensation. In rare cases these cells may be so active as to produce evidence of an acute intoxication. If the patient has had previous heart disease due to tonsillitis, acute rheumatic fever, chorea, syphilis, etc., the cardiac

symptoms manifest themselves and decompensation sets in much earlier in the disease; for example, at twenty or thirty, rather than fifty or sixty years of age.

A cardiotoxic goiter in the face of pregnancy should be handled the same as one not so complicated. Rarely does a thyroidectomy result in a miscarriage, and the care of the baby after her delivery adds another problem to the mother's hospital stay. The basal metabolic rate is increased only during cell hyperplasia. A person may be suffering from a goiter heart and have a lowered basal metabolism.

The answer to our third question "What can we do about it?", is remove the goiter. The important point to remember is that the entire gland is affected and the patient will not be cured until the entire gland is removed. These patients are treated as cardiac patients. They are put to bed and given morphine or sedation to aid rest. If respiration is embarrassed by pleural effusion a paracentesis is done. Bed rest alone may establish regular rhythm. Digitalis is used when regular rhythm is not established on bed rest. If regular rhythm is established with bed rest only, we feel the patient has a greater reserve supply of energy to carry him through the operation, and for that reason we always try bed rest alone first to help us evaluate our patient. Sometimes the auricular fibrillation will slow and decompensation becomes established, but normal rhythm does not return until one side of the goiter is removed. A two stage operation, the second stage six weeks to two months after the first one, is always done on patients with decompensation. There are a few cases where regular rhythm comes only after removal of the second lobe and still fewer where regular rhythm is never established. Quinidine may be used when regular rhythm is not established, but if it does not become regular in three days on three grains every three hours (making twenty-four grains in twenty-four hours), it will not return to normal. It is then advisable to give the patient a longer period of rest and to try it again.

Lugol's solution is also used in the preoperative treatment of these patients. The value of Lugol's solution is evidenced in from ten to twenty-one days and for that reason should be used for preoperative medication only. Continued use of Lugol's solution over a period of weeks or months or years does not prevent operation. These patients are "fast" to further effect from Lugol's solution. Their pulses do not slow, no matter how much bed rest they are given and they are always bad operative risks. These goiters are always removed in two stages regardless of the age of the

patient even though there is no history of damaged or decompensated heart. Patients with cardiotoxic symptoms are relieved by partial removal of the thyroid gland. That is why results were obtained by subtotal thyroidectomies. Subsequently the remaining thyroid tissue produces a recurrence of these symptoms and a second operation is indicated. Within the past two months a patient whose first operation was twenty-seven years ago, returned to the hospital. My teaching in medical school was that one-third of each lobe of the thyroid gland should remain in the patient to prevent the occurrence of myxedema. I presume yours was the same. This teaching was due to the report of Kocher in 1882 that cachexia thyropriva followed total removal of the thyroid gland. In reading his case histories we find that this condition followed total removal of the thyroid body only in adolescents and not in adults. We have abundant evidence in over eight years' experience that total removal of the thyroid gland in adults has resulted in no more incidence of postoperative myxedema than before total extirpation was done. The problem of myxedema is a special one. It sometimes develops spontaneously; it sometimes follows operations. One of our goiter patients had only a fetal adenoma removed; the remainder of her thyroid gland was left in her neck and she developed myxedema. When it follows operations it persists for a time and then disappears. Sometimes it is more or less permanent for years and the patient takes a grain of thyroid extract daily.

It is no longer necessary for patients to die of goiter hearts. They need not even suffer from them if the condition is recognized early and a radical operation is done. There is much controversy now as to how much a non-goitrogenic thyroid gland may act in the same way as a goitrogenic gland. It is quite possible that if a gland is normal its removal will not influence the heart in any way, and if a cardiac patient is benefited by a total thyroidectomy the gland is diseased and may be demonstrated to have been such by a histochemical study of the colloid.

SOUTH DAKOTA ERADICATES CATTLE TUBERCULOSIS

On July 1, the last three counties in South Dakota were officially designated by the United States Department of Agriculture as modified accredited areas, upon the completion of the necessary testing of all cattle, indicating that bovine tuberculosis has been reduced to less than one-half of one per cent. South Dakota is the forty-seventh state to have attained this distinction, and California is now the only state in which some counties are not modified accredited areas.

THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCES

HEREDITY IN CORONARY THROMBOSIS

LAURENCE E. COOLEY, M.D., Dubuque

It is generally accepted that there is a decided tendency for arteriosclerosis and coronary thrombosis to occur frequently in certain families. Any more general statement concerning the heredity of arteriosclerotic processes cannot be made at the present time. The following two case reports are of interest because of the presence of coronary thrombosis in a mother and son.

CASE REPORTS

Case 1. The patient, an elderly female eighty-three years of age, was first seen in November of 1933, at which time she complained of heart consciousness. On physical examination the heart rate was 132 per minute and an auricular fibrillation was present. There was a passive congestion in the lung bases, but otherwise there was no evidence of cardiac decompensation. The heart was enlarged to the left and extended to the anterior axillary line in the fifth interspace. Aminophyllin, small doses of digitalis and rest were prescribed and the patient progressed satisfactorily until March 24, 1936, when she fell and broke her hip. She was admitted to Finley Hospital the next day. The fracture was reduced and the patient was confined to her bed.

When the patient was lying on her back a pulsating mass the size of a small orange was felt in the mid-line just below the umbilicus. It was believed that this mass was an arteriosclerotic aneurysm of the abdominal aorta. Two and one-half weeks after admission to the hospital the patient developed evidences of a hypostatic pneumonia and died several days later. The points of interest in the autopsy performed by Dr. F. P. McNamara were as follows:

The heart was estimated to weigh 300 grams. The right side of the heart showed only slight arteriosclerotic changes. On opening the left ventricle a dense fibrous scar was found to have replaced a considerable part of the myocardium. (Fig. 1.) The left coronary artery was tortuous and showed marked calcification. In one area the lumen was very narrow, the condition apparently being due to an old organized thrombus. The aortic and mitral cusps showed a few atheromatous deposits. The root of the aorta showed well marked arteriosclerotic changes. The liver was

estimated to weigh 1,100 grams. On section it presented a nutmeg appearance of chronic passive congestion. The abdominal aorta showed marked arteriosclerotic changes with a tendency for the intima to ulcerate. Just above the bifurcation was



Figure 1. Photograph of the left heart (Case 1). Note the localized thinned out area (aneurysm) of the left ventricle.

an aneurysm projecting forward. On opening it was filled by a firm, red to gray clot which was adherent to the wall of the vessel.

Microscopic sections of the coronary artery showed a great thickening of the wall by connective tissue and deposits of cholesterol crystals as well as lime salts. The lumen was very small. Sections of the heart muscle showed marked fibrosis. Sections of the clot in the abdominal aneurysm showed it to be ante mortem. Sections of the liver showed central degeneration due to chronic passive congestion.

The anatomic diagnosis was as follows:

Primary:

1. Arteriosclerosis; thrombosed aneurysm of abdominal aorta.
2. Organized thrombus of the left coronary artery; healed infarct of the left ventricle; chronic passive congestion of the viscera; edema of the lungs.
3. Ununited fracture of the left femur.
4. Bronchopneumonia.

Subsidiary:

Diverticula of the duodenum; right fibrous pleurisy; simple cyst of the right kidney; divertic-

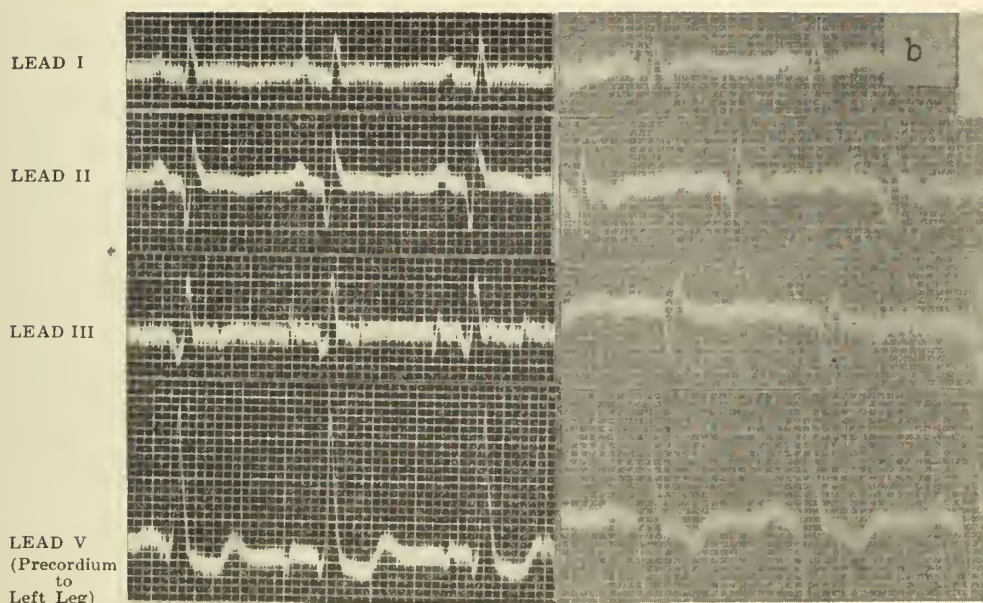


Figure 2. Electrocardiograms of Case 2. In (a) note depressed ST in Lead V. In (b) three months later, note that ST in Lead V has returned almost to normal.

ulosis of the sigmoid; adhesions about the gallbladder.

Case 2. A male, sixty-two years of age, the son of the patient described as Case 1, was first seen March 3, 1936, because of a pain in the left lower quadrant. On questioning it was found that there was a history of precordial distress on exertion and of a mild hypertension. There was also a history of an attack with a rapid, irregular heart beat three years previously. The patient had recovered from this former attack without any apparent difficulty.

On examination several extrasystoles were noted. The heart rate was 94 per minute, there was a temperature of 99.2 degrees and the blood pressure was 118/76. Electrocardiographic examination showed a definite coronary occlusion. (See Fig. 2a.) The patient was kept in bed for several weeks and was then gradually allowed to assume his regular life. He was told to reduce his weight and eat moderately. Four months later the electrocardiogram showed a return to almost normal of the T wave in Lead V. (See Fig. 2b.) He progressed satisfactorily on the whole during the next two years, although he had not reduced his intake of food nor his weight.

On March 28, 1938, the patient had an attack of mild precordial pain associated with nausea while making a long automobile trip. The pain was not severe and the patient thought he had a slight gastric upset. He came into my office two days later. At that time he noticed some palpitation but no dyspnea of any consequence. Physical examination revealed a heart rate of 178 per min-

ute. The blood pressure was 112/74 and the temperature was 98.2 degrees. An electrocardiogram was taken in the office. (See Fig. 3a.) The patient was promptly sent home to bed and the next morning the heart had returned to its normal rhythm with a rate of 82 per minute. (See Fig. 3b.) Because he was feeling well, he had a rather large meal four days later, although he had been ordered not to do so. That night he took a cathartic, also against orders. The patient was awakened early the next morning with precordial distress, and died suddenly two hours later.

The points of interest in the autopsy performed by Dr. F. P. McNamara were as follows:

The pericardial sac contained about forty cubic centimeters of clear straw-colored fluid. A fibrous adhesion extended from the apex of the heart to the pericardium. The heart was dilated on the right side but less so on the left. At the apex there was a discrete, rounded elevation with a firm silvery gray nodule in the center. Surrounding the latter was a reddened granular zone. On dissection the right heart was unremarkable. On the left the wall of the ventricle was thinner than normal and contained a large amount of gray fibrous tissue. At the apex the elevated area noted externally was due to a discrete dilatation of the wall which appeared to be entirely composed of connective tissue. At this point the wall was about four millimeters in thickness. There was an old organized clot as well as a more recent conical thrombus which extended upward into the ventricle for a distance of six centimeters. On dissection of the left coronary

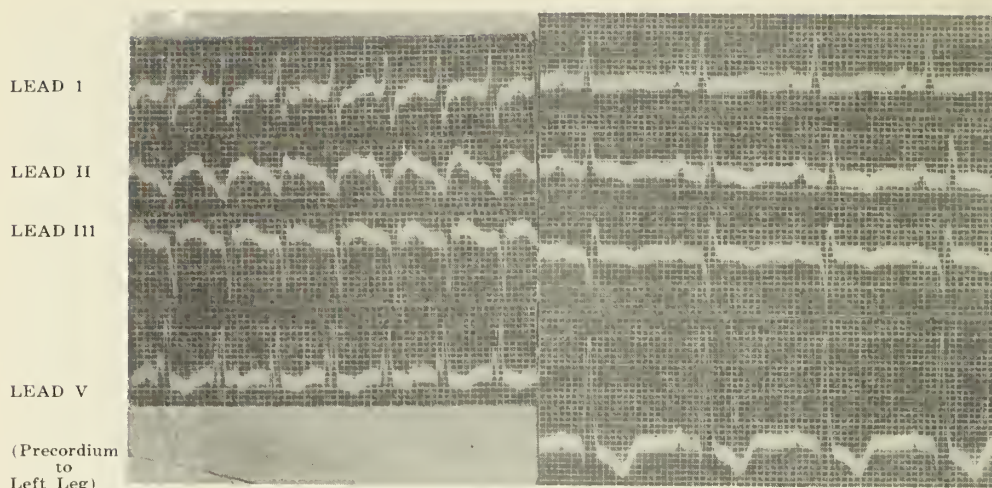


Figure 3. Electrocardiograms of Case 2. In (a) rate 182 per minute. Diagnosis, paroxysmal ventricular tachycardia. In (b) taken seventy-two hours later, the rate was 85 per minute and the rhythm had been restored to normal. Note minor changes in the T wave when compared with Figure 2 (b).

artery its lumen was found to be almost completely obliterated by yellow tissue, apparently an organized thrombus. The canal through the clot was not more than one millimeter in diameter. Elsewhere the heart showed only slight changes due to arteriosclerosis. The heart weighed 415 grams. (See Fig. 4.) The large venous and arterial trunks contained postmortem clots of blood. From above downward the abdominal aorta showed a progressive increase in

the amount of fatty material beneath the intima. Just above the bifurcation was a wide area where the intima was ulcerated and deposits of soft fatty material mixed with blood clots formed the base of the ulcer.

Microscopic sections of the heart muscle showed a marked increase of connective tissue which had largely replaced the myocardial cells. There was an acute thrombus on one side of the fibrosed muscle. Sections of the coronary artery showed the wall to be enormously thickened by accumulations of cholesterol crystals with scar tissue in some areas. The lumen was estimated to be about one-tenth the normal size. Sections of the abdominal aorta showed heaped-up masses of cholesterol crystals and structureless material with ulceration of the intima. Sections of the other organs only showed acute injection and moderate thickening of the arterial walls.

The anatomic diagnosis was as follows:

Primary:

1. Obesity; arteriosclerosis.
2. Old and recent left coronary thromboses; healed and recent cardiac infarction (cardiac aneurysm); mural thrombus of the left ventricle; pericardial adhesions; infarct of the spleen; and acute cardiac dilatation with acute congestion of the viscera.

Subsidiary:

Left fibrous pleurisy.

Family history:

No definite history of arteriosclerosis was obtainable on Case 1. However, this patient's husband, the father of Case 2, died of Bright's disease. One other son of Case 1 and a brother of

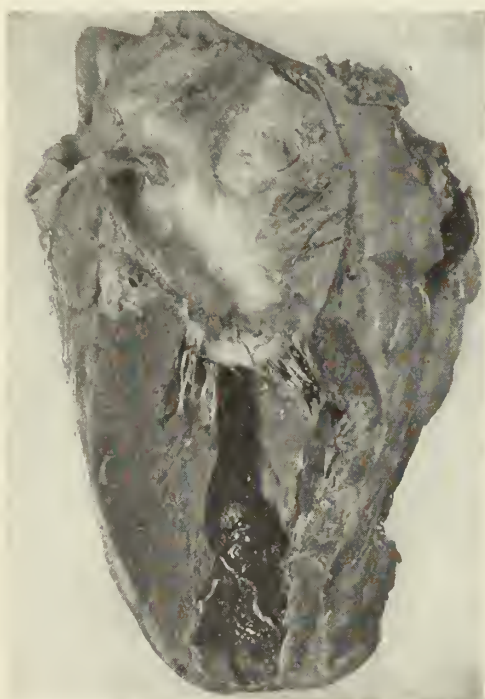


Figure 4. Photograph of the left heart. Note the thrombus in the aneurysm of the left ventricle, and scarring of the myocardium.

Case 2, although living, had had an attack which was probably due to coronary artery disease. One granddaughter of Case 1, who was a niece of Case 2, died of a cerebral hemorrhage at twenty-two years of age.

DISCUSSION

Riesman¹ described a case of coronary thrombosis occurring in brothers, while Levine² described coronary thrombosis in three brothers. Mills³ reported angina pectoris running through four generations. Of twenty-five members of the family known to Mills' patient, eight suffered from anginal attacks and five died while in a seizure. Gordinier⁴ reported a case of coronary thrombosis in which there was a family history of what seemed to be coronary thrombosis in four brothers, making a total of five brothers in one family having coronary thrombosis. Musser and Barton⁵ reported a case of coronary thrombosis in which the father and four cousins all died of what seemed to be coronary artery disease. They advanced the theory that there are two main groups of coronary artery disease. The first is observed in elderly individuals, possessing a well marked generalized arteriosclerosis and represent primarily the effects of senescence. The other occurs in men, as a rule, not past the sixth decade of life, who do not have generalized arteriosclerosis, who have a slight elevation in blood pressure, who are singularly free from past infections and who often give a history of coronary occlusion in several members of their family. In a recent article by Goldsmith and Willis⁶ a family history of cardiovascular renal disease was obtained in 55 per cent of the cases of coronary thrombosis. In 35 per cent of the patients two or more members of their immediate family, that is, parents or brothers or sisters, had arteriosclerosis. In eighteen out of three hundred patients both parents died of heart disease or cerebral hemorrhage. On the other hand Leary⁷ has accumulated considerable evidence pointing to arteriosclerosis as a metabolic disease. He has stated that there is a familial inheritance which seems to be dependent on a general inferiority of the metabolic systems. In other cases he believes that arteriosclerosis is produced by an excessive ingestion of cholesterol.

It is of interest to note that both cases reported here, in addition to having coronary thrombosis, showed evidences of marked ulceration of the abdominal aorta in almost exactly the same place. Anyone who has taken care of very old people with bad hearts has been impressed with the fact that they can live with very little trouble, as far as the heart is concerned, as long as

they lead a quiet existence. The patient described in Case 1 was able to get along satisfactorily with a little treatment in spite of having a heart that was badly damaged. Although the second patient led a comparatively inactive life from a physical standpoint, he was not as abstemious in regard to food intake as he should have been. After seeing his heart at autopsy, it is almost impossible to believe that he could have been up and around with a ventricular rate of 182 per minute and with as little evidence of discomfort as he had during the first days of his last attack. It has been my experience with other cases of coronary artery disease that such a ventricular tachycardia generally produces intense pain. The value of Lead V is illustrated very well in Case 2. One could make the diagnosis of coronary thrombosis from this lead alone even though the other leads were not absolutely characteristic.

613 Roshek Building.

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GRADUATE COURSE IN ELECTRO-CARDIOGRAPHY

An intensive two weeks' course in electrocardiography for graduate physicians will be given at Michael Reese Hospital in Chicago, from August 22 to September 3, 1938, inclusive, by Dr. Louis N. Katz, director of cardiovascular research. Group and individual instruction will be given, and the course is open to both the beginning and advanced student in electrocardiography.

There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. Sessions will be held on interpretations of electrocardiograms and practice with unknown records. Lectures on the principles involved in standard and chest leads will be given.

According to the announcement, the course will be individualized so that at the end of the training period, each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose, the class will be limited in number. Those in charge of the course, therefore, suggest early reservation.

A copy of the program and details in regard to tuition will be sent on request. Communications should be addressed to the Medical Librarian, Michael Reese Hospital, Twenty-ninth and Ellis Avenue, Chicago, Illinois.

STATE DEPARTMENT OF HEALTH

Valer L. Living

DATA FROM UNDULANT FEVER OR
BRUCELLOSIS CASE RECORDS

In 1937, the total number of undulant fever cases reported to the State Department of Health was 137. Fifty-four cases have been reported thus far in 1938, making a total for 1937 and the first half of 1938, of 191 reported cases. Through the interest and cooperation of attending physicians, 139 case records have been completed and returned to the State Department of Health for the past year and one-half period.

Age and Sex Distribution of Patients

In the series of 139 records, distribution of the cases according to sex and age groups is as shown in the following table:

Table I
UNDULANT FEVER IN IOWA, 1937-1938
(First Six Months)

Age Group	Male	Female	Total
Under one year.....	.....	.....	.....
1 to 4 years.....	1	1	2
5 to 9 years.....	.....	3	3
10 to 19 years.....	8	4	12
20 to 39 years.....	63	15	78
40 to 59 years.....	27	7	34
60 to 79 years.....	4	1	5
Over 80 years.....	.....	.....	.....
Totals	103	31	134

The accompanying bar graph, Figure 1, presents in graphic form the information contained in Table I.

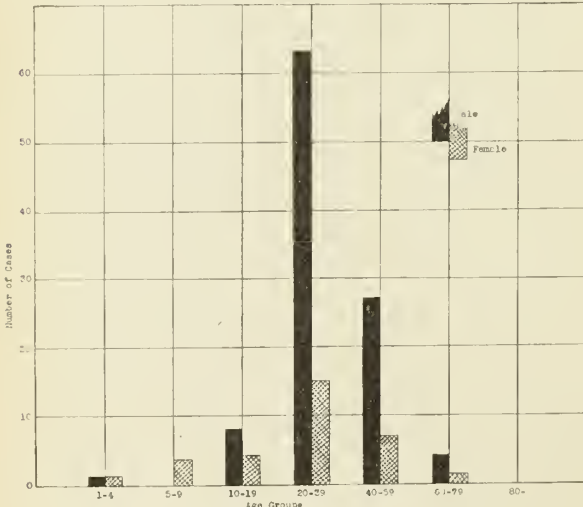


FIG. 1. UNDULANT FEVER IN IOWA
Showing Distribution by Age and Sex of 134 Cases
Reported in 1937 and 1938 (First Six Months)

It will be noted in the table and graph that the majority of cases of undulant fever in Iowa affect persons between twenty and sixty years of age. Significant also is the fact that in the age groups, twenty to fifty-nine years, male patients out-number female patients by a ratio of about four to one.

Seasonal Prevalence

Of the total of 139 case records, 132 give the desired information regarding the time of onset of illness. Distribution of the cases according to month of onset is indicated in the following table (Table II), and by the accompanying line diagram, Figure 2:

Table II
TIME OF ONSET BY MONTHS

	Total
January	15
February	19
March	9
April	11
May	13
June	6
July	12
August	9
September	12
October	7
November	9
December	10
Total	132

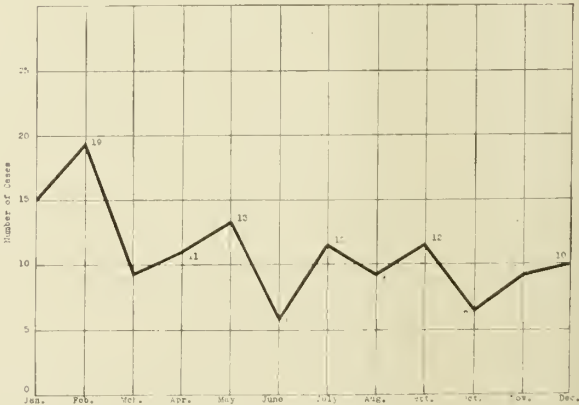


FIG. 2. SEASONAL OCCURRENCE OF UNDULANT
FEVER IN IOWA
Showing Distribution of Cases According to Month of Onset of
Symptoms Based on 139 Cases Reported in 1937 and
1938 (First Six Months)

The only conclusion to be drawn from this table and graph is that cases of undulant fever occur

during every month of the year. The disease, though usually of sporadic nature, is always with us. Case records covering a period of years show that more patients in Iowa have onset of symptoms during August than in any other month of the year.

Occupation and Residence

The series of undulant fever records for 1937 and the first six months of 1938 indicate 60 of the patients as living in the country and 79 in cities or towns. In the rural group, 44 were male farm workers, ten were farm wives and six were children of school age. Forty-nine of the patients in the urban group included merchants, professional persons and tradesmen. Fourteen patients were packing house employees. Housewives numbered nine, there were six school children and one livestock dealer.

Contact with Farm Animals

Among 56 undulant fever patients who gave no history of contact with hogs, cows or other animals, 48 or 86 per cent lived in urban areas, and eight or 14 per cent on farms. In addition, 83 patients gave a history of direct contact with domestic animals; 63 per cent of these people lived on farms, the remaining 37 per cent in urban communities.

Source of Infection in Undulant Fever

Determination of the probable source of infection in undulant fever cases is dependent upon close cooperation with veterinary health officials and veterinarians. The State Department of Health collaborates with the Bureau of Animal Industry and the State Department of Agriculture, in arrangements for testing of hogs and cows for evidence of brucellosis or infectious abortion (Bang's disease). In 1937, the cooperative arrangement with the Bureau of Animal Industry gave helpful information regarding the probable source of infection of 23 undulant fever

patients. Blood specimens were obtained from 29 herds comprising 548 cows suspected of harboring brucellous infection. Four hundred and six or 74 per cent of the cows were negative, but 127 or 23 per cent proved to be reactors to the agglutination test for infectious abortion; an additional three per cent gave a doubtful reaction.

Eight of the 23 patients gave no history of contact with domestic animals. Examination of the herds concerned in these eight cases showed positive reactors in seven out of the eight instances. Fifteen of the 23 patients gave a history of having had contact with animals. In five cases positive reactors were found in cows but hogs were not tested on the farms concerned and evidence regarding the source of infection is, therefore, inconclusive. In six cases in which patients had contact with cows but not with hogs, cows were found to be infected and are, therefore, regarded as having been the source of infection. In two instances cows were found to be infected but hogs showed negative tests. In one case cows failed to react but seven of eight hogs gave positive tests. Both cows and hogs proved negative in one case and the source of infection remained obscure. If hogs were examined routinely along with cows in connection with undulant fever affecting farm workers, it is likely that many more cases would prove to be due to the porcine type of brucella (*Brucella suis*).

Positive blood cultures obtained by attending physicians during the early, febrile stage of the patient's illness are of vital importance in signifying whether infection was acquired from infected hogs or from infected cows. Definite determination of the source of infection in a high percentage of undulant fever patients is dependent directly upon the obtaining of a blood culture, whenever feasible, and upon agglutination testing of hogs and cows incriminated in cases of human illness.

PREVALENCE OF DISEASE

	May '38	April '38	May '37	Most Cases Reported From
Diphtheria	11	8	16	Buena Vista, Floyd
Scarlet Fever	435	880	695	Polk, Black Hawk, Woodbury
Typhoid Fever	10	5	2	Polk
Smallpox	121	195	128	Lee, Monroe, Des Moines
Measles	1300	925	21	Black Hawk, Woodbury, Polk
Whooping Cough	154	100	153	Des Moines, Woodbury
Cerebrospinal Meningitis	1	4	0	Buena Vista
Chickenpox	284	337	173	Woodbury, Dubuque, Black Hawk
Mumps	129	107	74	Woodbury, Dubuque, O'Brien
Influenza	8	11	11	(For State)
Poliomyelitis	3	1	0	Calhoun, Decatur, Harrison
Tuberculosis (Pulmonary)	94	84	40	(For State)
Undulant Fever	6	5	17	(For State)
Gonorrhea	159	175	190	(For State)
Syphilis	258	365	329	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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Vol. XXVIII JULY, 1938 No. 7

TICK-BORNE DISEASES

Interest in the possible contraction of serious diseases from the bites of ticks is manifested by both the lay public and physicians at this season of the year. It may, therefore, not be amiss to review in these columns, some of the more important aspects of tick-borne diseases, with special emphasis being placed on Rocky Mountain spotted fever. According to Parker, et al.,¹ "Five tick-borne diseases of man are now known to be endemic in the United States. Rocky Mountain spotted fever, tularemia, relapsing fever, Colorado tick fever, and tick paralysis. One or more of these diseases occurs in each of 46 states (all but Connecticut and Vermont) and tick transmission has been proved in 37."

"Five species of ticks have been incriminated in the transmission of these diseases, five others are considered as potential vectors, and three more are recognized as actual or possible indirect agents of infection because of their known or suspected rôles in the natural maintenance of certain of the pathogens concerned. There is at least one of the proved vectors in each state; some have two or three, while California has all five. Each state also has one or more of the additional species mentioned as of potential or indirect importance."

In Iowa, attention has been particularly focused upon spotted fever because of the known occurrence of thirty-three cases reported to the State Department of Health in the five year period from 1933 to 1937. The observed mortality rate of approximately twenty-five per cent among these cases, has established the disease as one to be highly feared. The *Dermacentor variabilis*, a species of wood tick commonly known as the dog tick, has been proved to be the source of spotted fever for man in this state.

The etiologic agent in Rocky Mountain spotted fever is the "Rickettsia body," so named in honor of Dr. Howard J. Ricketts, who more than thirty years ago demonstrated the rôle played by ticks in the transmission of the disease. The relation of the Rickettsia germ to spotted fever, however, was not established until 1916 by Wolbach. The germ is able apparently to perpetuate itself in several ways. The infected female tick passes the germ into the eggs and then it appears in the next generation of larvae, nymphs and mature male and female ticks. Uninfected ticks may become infected by biting small animal hosts which have previously acquired the germs from bites of infected ticks. Last year the State Department of Health sent ticks from Clarke and Tama counties, where cases of spotted fever had occurred, to the United States Public Health Service, Spotted Fever Laboratory at Hamilton, Montana. This laboratory reported that some of these ticks were found to be infected with the germ of spotted fever. It is, of course, impossible to know just what proportion of the wood ticks of Iowa are carriers. The proportion is probably small, but the potentiality is always present. The usual method of transmission of these germs to human beings is from the bite of the infected ticks maintained sufficiently long so that some degree of engorgement results. However, it is possible, to acquire infection through minute abrasions in the skin from the crushed bodies of infected ticks. The importance of using forceps or gloves for removing ticks from animals or humans has been repeatedly stressed.

The incubation period of spotted fever is usually given as varying from two to ten or twelve days, being shorter in more virulent forms of the disease. The early symptoms are like those of many other acute infectious diseases, so that diagnosis is hardly possible until the eruption makes its appearance on the third to the fifth day of fever. The typical rash appears first on the wrists and ankles, later spreading to nearly all parts of the body. As the disease progresses, the color of the rash changes from a bright rose to a dark tinge, brownish and sometimes bluish. The duration of the febrile period is commonly from two to three weeks. The mortality rate varies from five to eighty per cent. When the disease has once begun its course, treatment is entirely symptomatic.

However, a method of prophylaxis has been developed in the nature of a vaccine known as the Spencer-Parker vaccine. This vaccine is prepared only at the Rocky Mountain Spotted Fever Laboratory in Hamilton, Montana. It is made from the crushed bodies of infected ticks diluted in salt

solution and preserved in phenol. Dosages recommended are two injections of one cubic centimeter each for children under ten years of age, and two injections of two cubic centimeters each for adults. Parker² concludes after ten years' experimentation with this vaccine, that it has definite value. The degree and duration of protection vary with the vaccinated individual and with the degree and virulence of an infecting strain of spotted fever virus. Apparently the immunity secured lasts for only one season and must be repeated each year. Parker found that complete protection is likely to result in those areas where the disease is of moderate severity, but he feels the vaccine would not completely prevent the disease in its most severe forms. Furthermore, vaccination was shown to be of some benefit when administered after the bite had occurred, but before clinical symptoms had made their appearance.

The vaccine is not recommended as a general public health measure, due to the expense of the material, and the infrequency of the disease. However, in those areas where cases are occurring, one is entirely justified in using this vaccine, since it is unassociated with undesirable reactions and is protective to a satisfactory degree. The vaccine is not available on the market, but may be secured through the State Department of Health in Des Moines.

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SPLENECTOMY IN THROMBOCYTOPENIC PURPURA

Thrombocytopenic purpura is an unusual and dramatic clinical state, first described by Werlhof in the early part of the eighteenth century. It is characterized by petechiae and ecchymoses in the skin, hemorrhage from the mucous membranes, and by a prolonged bleeding time, a reduced platelet count, a non-retractile clot, and a normal coagulation time. The condition may be acute with alarming hemorrhage, or chronic with recurring hemorrhages over a period of years.

Except for temporary improvement by blood transfusion the treatment of thrombocytopenic purpura has been ineffectual. Hess first suggested splenectomy in the treatment and this was successfully performed in 1916 by Kaznelson. Whipple and Spence have presented large series of cases clearly demonstrating the value of surgery in the chronic type of the disease. In the acute form, repeated transfusions are indicated until alarming symptoms have subsided, after which

splenectomy may be performed. Following splenectomy the hemorrhages cease, the purpuric eruption disappears, and the bleeding time and clot retractility return to normal. Immediately after splenectomy there is usually a platelet crisis with a rise to 500,000 or one million per cubic millimeter. In a short time the number of platelets decrease and may fall to as low a level as existed before surgery, but in spite of this fact, bleeding usually does not occur.

No satisfactory explanation for the efficacy of splenectomy in purpura had been advanced, despite repeated clinical demonstrations of its value. During the past year Troland and Lee of the Department of Surgery of Johns Hopkins University have presented scientific evidence corroborating the clinical effectiveness of splenectomy in this condition. These authors subjected spleens, which had been removed from patients with thrombocytopenia, to grinding in a food chopper, extraction with acetone, distillation and solution of the residue in distilled water. Following injection of the splenic extract intravenously into normal rabbits the platelets were reduced as much as 90 per cent in twenty-four hours, a fall from 620,000 to 58,000 platelets per cubic millimeter. Similar results were obtained from three thrombocytopenic spleens. Troland and Lee state that this extract from thrombocytopenic spleens, which they call "thrombocytopen," has no effect on the red or white counts, and appears to be specific for thrombocytopenic substance. Control experiments with extracts of spleens removed for Banti's disease and for hemolytic jaundice had no effect on the blood platelets.

These pioneer experiments in the pathogenesis of this unusual clinical condition indicate that the spleen in thrombocytopenic purpura contains a substance which destroys or inhibits the formation of blood platelets, and confirms the clinical benefit of splenectomy.

HIGHLIGHTS OF THE SAN FRANCISCO SESSION

The recent meeting in San Francisco is said to have been the best meeting of the American Medical Association ever held on the Pacific coast. Of the 6,000 registered, about 4,600 were from west of the Mississippi; 3,100 were from California. The scientific programs and exhibits were up to the usual standards. It appears that from year to year an increasing number of members of the profession spend more time in the scientific exhibit where they can make personal contacts with those engaged in research and education.

The House of Delegates was engaged in busi-

ness sessions for two and one-half days, the usual program for that body. Many resolutions which pertained to various phases of economics and medical education were introduced. The press seemed more interested in controversial questions than was the House of Delegates. In fact the press was prone to create controversies where little or none existed. This was true with reference to the resolutions of the New Jersey State Society censuring Dr. Morris Fishbein because his writings have not been confined to the official publications of the American Medical Association. The New Jersey resolution had been given publicity at the time of the New Jersey state meeting, and the press was primed and ready to report a fight. It was apparent that interests responsible for dubbing organized medicine as static and stubborn and obstructive would be delighted with a row centering about the editor. The New Jersey resolution was considered on the floor before the House assembled in executive session. Indicative of the interest of someone on the outside for a listening post is the fact that the wires of the loud-speaking apparatus were tapped for this executive session. This was discovered in the midst of the executive session and the procedure was interrupted until the microphone was muffled.

The writer regrets that the whole session was not available to those interested. They would have been the more convinced that the House of Delegates was not going to be divided by anyone's "red herring." Criticism of Dr. Fishbein was directed at his newspaper columns and the advertising of some of his books. He defended himself in his inimitable manner, offering his record in the field of public relations as his great contribution to organized medicine through the American Medical Association. At the conclusion of his statement the New Jersey delegates joined the House in a unanimous vote of confidence. Probably the majority of the House felt that the editor was not beyond just criticism in his activities, but no group of men is more cognizant of the fact that perfection is rare, and the House was not going to be guilty of weakening the association and giving comforts to its most vociferous critics by creating dissension in this situation.

It is generally recognized that the profession cannot indefinitely carry the load of the indigent and the low income group, but the House of Delegates is still of the firm opinion that medical service must not be placed under the direction of lay persons to the certain detriment of standards of medical services. The House is expecting a great deal of help from the much discussed surveys by county societies of the distribution of medical

services. A communication from the National Health Committee was read to the House in which the viewpoint of those in the federal administration is suggested for greater participation by the government in the practice of medicine. This was not openly discussed since a conference is being called in Washington during the latter part of this month for consideration of these problems. The American Medical Association will be represented. After this it should be possible to predict what may be the immediate objectives of the social security group in the federal administration.

The resolutions of the Iowa delegation were well received. The House was receptive, reasonable, and responsive. The resolution dealing with the policy of the Committee on Foods, with reference to butter and oleomargarine was given ready support by the delegates as soon as they appreciated the real state of affairs. The Wisconsin delegates were under instructions similar to the Iowa delegates and had a like resolution. Delegates from these two states had no difficulty in enlisting well distributed support for the resolutions before the reference committee. The resolutions were discussed before the committee, by men from New York, Maryland, South Carolina, Wisconsin, Minnesota and Iowa. When this group presented its argument, representatives of the Committee on Foods conceded that the policy was wrong. The reference committee made specific recommendations for changing the policy, including butter in their considerations, and preparing a statement for the public showing the relative merits of butter and oleomargarine as food products. The House adopted this recommendation by unanimous vote. The manner in which the House accepted these resolutions and reversed the policy of the Committee on Foods indicates clearly that the House is a democratic body and refutes the statements often seen in the press to the contrary.

At the suggestion of the committee of the Iowa State Medical Society appointed to study laboratory and clinical standards for the determination of alcoholic intoxication and drunkenness, a resolution was introduced in the House of Delegates of the American Medical Association requesting the Board of Trustees to appoint some agency in the Chicago office to make a study of this subject and report at the next annual meeting of the American Medical Association. The reference committee recommended it for favorable consideration of the House and it was adopted without dissenting vote.

The feeling is increasing that the federal administration through the use of social security

funds is making definite inroads in the field of graduate extension work. A number of states have done outstanding work in offering successful courses to the profession at home. Iowa is among the leaders in this field. In every instance in which notable work has been done, either the State Society or the medical schools in that state have been responsible for the development. In not a single instance have federal funds been responsible for the enterprise. More recently these funds have been available to carry on and it is apparent that through this means it is possible for the federal administration to assume more and more control over education and practice if leadership passes from the state society to outside groups who would be responsible to remote control because of using federal funds.

The writer came from this meeting feeling that the profession of the nation is more united than ever before and that it has a better appreciation of the dangers involved in federal control. There is a well disseminated feeling that undesirable governmental regimentation is to be avoided by education of the public rather than by unexplained resistance.

ROCKY MOUNTAIN SPOTTED FEVER REPORTED

On July first, a case of Rocky Mountain spotted fever was reported to the State Department of Health from Buchanan county by Paul J. Leehey, M.D., of Independence. The patient, a farm wife, about sixty-five years of age, had onset of her illness June 7, with headache, backache, weakness, gastric discomfort, anorexia and fever. An eruption appeared June 10, scattered macular lesions of "match head" size being visible on the arms, legs and back; the rash faded within a week.

Dr. Leehey, suspecting Rocky Mountain spotted fever, sent a blood specimen to the State Hygienic Laboratory on June 17. The laboratory reported a positive agglutination reaction with the Weil-Felix test, in a dilution of 1-160. A second blood specimen obtained June 26 showed agglutination in the 1-640 dilution. The patient gave no history of tick bite or of a tick having been found on the body. She recalled that a wasp or some kind of insect had stung her about three weeks preceding the present illness. Although the patient lost twenty-seven pounds in weight, the illness was not of serious nature and recovery was uneventful.

The diagnosis of Rocky Mountain spotted fever in this instance, would not have been established beyond doubt, without confirmation by positive laboratory reports. Epidemiologic investigation

of this, the second case of spotted fever to be reported in Iowa thus far in 1938, was made together with Dr. Leehey and in cooperation with Harry H. Ennis, M.D., Medical Director of Health District No. 3, with offices at Manchester in Delaware county.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Medical Economics Committee Meeting May 11, 1938

The Medical Economics Committee of the Iowa State Medical Society met at the Fort Des Moines Hotel, Wednesday, May 11, at one-forty-five p. m. Those present were Drs. T. F. Thornton, E. E. Shaw, J. C. Hill, A. C. Moerke, Robert L. Parker of the State Society, Dr. R. G. Leland of the American Medical Association, and Mr. Anway and Dr. Meriweather of the Farm Security Administration.

Mr. Anway stated that the Farm Security Administration medical program was in force in Wayne and Crawford counties in Iowa, and that while there was no problem in regard to ordinary fees, there were no set fees for emergency surgical cases. After a discussion of the subject it was voted that fees for emergency cases of the Farm Security Administration should be decided by the local county medical society; that a committee of the county society be the judge of the bills rendered, using the fee schedule of the Iowa State Medical Society as a basis; and that the fees as approved by the county medical society should not be subjected to a cut by the Farm Security Administration.

It was decided that this resolution should be presented to the House of Delegates of the Iowa State Medical Society at its opening meeting, May 11, and it was also voted that the Medical Economics Committee recommend to the House of Delegates that the Iowa State Medical Society cooperate with the American Medical Association to conduct a survey on medical care, and that this be done through the Medical Economics Committee with the cooperation of the councilors and deputy councilors.

The meeting adjourned at three-thirty p. m.

Meeting of the Council May 11, 1938

The Council of the Iowa State Medical Society met in the Fort Des Moines Hotel at two p. m. Wednesday afternoon, May 11, following the secretaries' luncheon. All members of the Council were present. Dr. Reeder, chairman of the committee appointed to study the Speakers Bureau, read a letter containing the findings and recommendations of the committee, and the matter was discussed thoroughly by all of the councilors. The chairman requested that the members deliberate upon the problem, and come to the Friday meeting of the Council with plans for the continuance of the Speakers Bureau. Dr.

(Concluded on page 352)

Minutes of the Iowa State Medical Society

Eighty-seventh Annual Session

May 11, 12 and 13, 1938

Wednesday Morning, May 11, 1938

The opening session of the Eighty-seventh Annual Session of the Iowa State Medical Society, held at the Fort Des Moines Hotel, Des Moines, May 11 to 13, 1938, convened at eight forty-five o'clock, Dr. Edward M. Myers, Boone, president, presiding.

The invocation was delivered by Reverend C. Clifford Bacon.

Dr. Oran W. King, president of the Polk County Medical Society, extended greetings to the assembly, and Dr. Arch F. O'Donoghue, second vice president of the Iowa State Medical Society, responded for the society.

Dr. Myers presented Dr. Cyrus C. Sturgis, professor of internal medicine, University of Michigan Medical School, Ann Arbor, Michigan, the medical guest speaker. Dr. Sturgis spoke on the subject: "Diseases Associated with Changes in the Red Blood Cells," and conducted a clinic in which patients exhibiting this type of disease appeared.

Dr. Myers then presented Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, St. Louis, Missouri. Dr. Graham discussed the subject: "Thoracic Surgical Diseases" and examined patients clinically.

Dr. Charles W. Ellyson of Waterloo spoke on "An Important Medicolegal Responsibility in Automobile Accidents".

Dr. Arch F. O'Donoghue, Sioux City, second vice president, assumed the chair while the presidential address was delivered by Dr. Edward M. Myers.

The meeting adjourned at twelve o'clock.

Thursday Morning, May 12, 1938

The Thursday morning session convened at nine-five o'clock, President Myers presiding.

Dr. Evarts A. Graham, of St. Louis, spoke on "Gallbladder Disease," and examined patients exhibiting various phases of the disease.

Dr. Cyrus C. Sturgis of Ann Arbor, presented a paper and clinic on "Diseases Associated with Changes in the White Blood Cells".

Dr. Sydnor D. Maiden of Council Bluffs discussed

"Speakers Bureau Activities," illustrating his address with lantern slides.

Dr. Abbott M. Dean, chairman of the eye, ear, nose and throat section, introduced the guest speaker for that section, Dr. O. Jason Dixon of Kansas City, Missouri. Dr. Dixon addressed the assembly on the subject: "The General Practitioner As His Own Otologist."

The meeting adjourned at twelve o'clock.

Friday Morning, May 13, 1938

The meeting convened at nine o'clock, with First Vice President Kenneth L. Johnston, presiding.

A symposium on obstetrics was presented, with the following speakers discussing the various subjects:

Dr. Everett D. Plass of Iowa City—"General Indications and Contraindications for Operative Delivery."

Dr. Lawrence E. Kelley of Des Moines—"Occiput Posterior as an Obstetric Difficulty."

Dr. Howard A. Weis of Davenport—"The Forceps Operation".

Dr. William F. Mengert of Iowa City—"The After-coming Head".

Dr. Everett D. Plass of Iowa City—"The Cesarean Problem".

Dr. Otto N. Glesne of Fort Dodge—"Other Obstetric Operations".

Dr. John H. Randall of Iowa City—"The Maternal Hazards of Operative Delivery".

Dr. Roy E. Crowder of Sioux City—"The Fetal Hazards of Operative Delivery".

Dr. Myers assumed the chair, and asked Dr. Walter L. Bierring to introduce Father Alphonse M. Schwitalla, Dean of St. Louis University School of Medicine, St. Louis, Missouri, who spoke to the assembly on "Medical Economics".

Dr. Parker gave a brief report of the transactions of the House of Delegates, following which Dr. Felix A. Hennessy of Calmar, the new president elect was introduced. Dr. Arthur W. Erskine of Cedar Rapids was installed as president of the society, and the meeting adjourned at eleven-fifty o'clock.

Section on Medicine

Wednesday Afternoon, May 11, 1938

The first session of the Section on Medicine, held in connection with the Eighty-seventh Annual Session of the Iowa State Medical Society, at the Fort Des Moines Hotel, Des Moines, May 11 to 13, 1938, convened at two-ten o'clock, with Dr. Laurence E. Cooley, chairman of the section, presiding.

The following papers were presented:

"Prevention of Poliomyelitis", by Dr. Fred Moore

of Des Moines; discussed by Dr. Glenn E. Harrison of Mason City.

"Contact Dermatitis", by Dr. Louis J. Frank of Sioux City; discussed by Dr. Maurice H. Noun of Des Moines and Dr. Ruben Nomland of Iowa City.

"Kidney Function Tests", by Dr. William C. Eglhoff of Mason City; discussed by Dr. Hyman M. Hurevitz of Davenport and Dr. Robert J. Nelson of Clinton.

"Depressive States in General Practice", by Dr.

John I. Marker of Davenport; discussed by Dr. Russell C. Doolittle of Des Moines.

"Diverticulosis and Diverticulitis", by Dr. Claire A. Trueblood of Indianola; discussed by Dr. H. H. Webb of Ottumwa and Dr. E. B. Floersch of Council Bluffs.

The meeting recessed at four-thirty o'clock.

Thursday Afternoon, May 12, 1938

The meeting convened at two o'clock, with Chairman Cooley presiding.

Dr. Edward N. Cook of Rochester, Minnesota, spoke on "Urinary Antiseptics" after which the following papers were presented:

"The Undernourished Child", by Dr. Roland Stahr of Fort Dodge; discussed by Dr. Preston E. Gibson

of Davenport and Dr. Morgan J. Foster of Cedar Rapids.

"Delayed Resolution in Bronchopneumonia," by Dr. Fern N. Cole of Iowa Falls; discussed by Dr. J. L. Kestel of Waterloo and Dr. John C. Parsons of Des Moines.

"Cardiovascular Syphilis", by Dr. Ray J. Harrington, of Sioux City; discussed by Dr. George H. Clark of Oskaloosa and Dr. Herman J. Smith of Des Moines.

"Intraspinal Tumors: Diagnosis and Recoverability of Cord Function", by Dr. Olan R. Hyndman of Iowa City; discussed by Dr. J. Stuart McQuiston of Cedar Rapids.

The meeting adjourned at four-thirty o'clock.

Section on Surgery

Wednesday Afternoon, May 11, 1938

The first session of the Section on Surgery, held in connection with the Eighty-seventh Annual Session of the Iowa State Medical Society, at the Fort Des Moines Hotel, Des Moines, May 11 to 13, 1938, convened at two o'clock, Dr. Nelson M. Whitehill of Boone, chairman of the section, presiding.

The following papers were presented:

"Recent Advances in Chest Surgery", by Dr. N. Boyd Anderson of Des Moines; discussed by Dr. Elmo E. Gamet of Lamoni and Dr. Charles C. Colles-ter of Spencer.

"Treatment of Infections of the Face and Neck", by Dr. Frank M. Keefe of Clinton; discussed by Dr. Raymond S. Grossman of Marshalltown and Dr. Eli F. Rambo of Webster City.

"The Interpretation of Upper Abdominal Pain", by Dr. Robert Y. Netolicky of Cedar Rapids; discussed by Dr. Alfred A. Eggleston of Burlington, and Dr. Anthony C. Pfohl of Dubuque.

"Regional Enteritis", by Dr. James V. Prouty of Cedar Rapids; discussed by Dr. Frederick W. Mulsow of Cedar Rapids and Dr. Donald H. Kaump of Des Moines.

"Management of Uterine Malignancy", by Dr.

Roland F. Martin of Sioux City; discussed by Dr. Arnold L. Nelson of Winterset and Dr. John R. Parish of Grinnell.

The meeting adjourned at four-thirty o'clock.

Thursday Afternoon, May 12, 1938

The second meeting of the Section on Surgery convened at two o'clock Thursday afternoon, with Chairman Whitehill presiding.

The following papers were presented:

"Evaluation of Injection Treatment of Hernia", by Dr. Jacob S. Weber of Davenport; discussed by Dr. Robert L. Feightner of Fort Madison and Dr. Walter A. Anneberg of Carroll.

"Treatment of Abdominal Injuries and Associated Complications", by Dr. Erwin J. Gottsch of Shenandoah; discussed by Dr. Walter A. Matthey of Davenport and Dr. Robert C. Knott of Sioux City.

"Treatment of Injuries of Vertebrae and Cord", by Dr. Donald C. Conzett of Dubuque; discussed by Dr. Channing E. Dakin of Mason City and Dr. Verl A. Ruth of Des Moines.

"Treatment of Craniocerebral Injuries", by Dr. Harry E. Mock, of Chicago, Illinois.

The meeting adjourned at four-thirty o'clock.

Section on Ophthalmology, Otology and Rhinolaryngology

Wednesday Afternoon, May 11, 1938

The opening session of the Section on Ophthalmology, Otology, and Rhinolaryngology, held in connection with the Eighty-seventh Annual Session of the Iowa State Medical Society, at the Fort Des Moines Hotel in Des Moines, May 11 to 13, 1938, convened at two o'clock, Dr. Abbott M. Dean of Council Bluffs, chairman of the section, presiding.

The following papers were presented:

"Management of Glaucoma", by Dr. T. L. McKee of Keokuk; discussed by Dr. J. C. Decker of Sioux City.

"Treatment of Convergent Squint in Private Practice", by Dr. John A. Thorson of Dubuque; discussed by Dr. H. A. Bender of Waterloo.

"Retrolbulbar Neuritis of Uncertain Origin", by Dr. Edward C. Nowak of New Hampton; discussed by Dr. Royal F. French of Marshalltown.

"Marginal Refractive Errors", by Dr. Orval L. Thorburn of Ames; discussed by Dr. Abbott M. Dean of Council Bluffs.

The meeting recessed at four-thirty o'clock.

Thursday Afternoon, May 12, 1938

The second session of the Section on Ophthalmology, Otolaryngology and Rhinology was called to order at two o'clock Thursday, May 12, by Chairman Dean.

The following papers were presented:

"Modern Methods in the Treatment of Mastoid

Disease", by Dr. O. Jason Dixon of Kansas City, Missouri, guest speaker of the section.

"Sulfanilamide in Otolaryngology", by Dr. Cecil C. Jones of Des Moines; discussed by Dr. Jack V. Treynor of Council Bluffs and Dr. Harold J. McCoy of Des Moines.

"Institutional Epidemic Mastoiditis", by Dr. Sidney G. Hands of Davenport; discussed by Dr. Dean M. Lierle of Iowa City.

"Latent Mastoid Infections", by Dr. Fred F. Agnew of Independence; discussed by Dr. Cecil C. Grant of Cedar Falls.

The meeting adjourned at four o'clock.

Transactions of the House of Delegates Iowa State Medical Society, Eighty-seventh Annual Session May 11, 12 and 13, 1938

The first session of the House of Delegates, held in connection with the Eighty-seventh Annual Session of the Iowa State Medical Society, at the Fort Des Moines Hotel, Des Moines, May 11 to 13, 1938, convened at three forty-five o'clock, Dr. Edward M. Myers, Boone, president, presiding.

President Myers: The House of Delegates of the Eighty-seventh Session of the Iowa State Medical Society will please come to order.

It is very gratifying to see such a large attendance of delegates here today and to note the interest and spirit which you are showing in our state medical affairs. We have a full program this afternoon. I make no pretense of being a parliamentarian, but I hope that in all our deliberations I will be able to rule with impartiality, considering the majority as well as the minority. Make your discussion as concise as possible, and I think we will get through this session without any discord. The first item is the roll call.

Secretary Parker: Mr. President, I move that the cards as signed by the delegates constitute the official call.

The motion was seconded, put to a vote and carried.

Roll call showed the following representation of counties by delegates and alternates:

Delegates

Audubon.....	L. E. Jensen
Benton.....	G. W. Yavorsky
Bremer.....	L. C. Kern
Buchanan.....	H. A. Householder
Buena Vista.....	M. A. Armstrong
Butler.....	Bruce Ensley
Calhoun.....	P. W. Van Metre
Carroll.....	O. P. Morganthaler
Cass.....	W. S. Greenleaf
Cerro Gordo.....	H. D. Fallows
Clarke.....	C. R. Harken
Clinton.....	R. T. Lenaghan
Davis.....	C. H. Cronk
Decatur.....	G. P. Reed
Des Moines.....	J. T. Hanna
Dubuque.....	C. C. Lytle
Emmet.....	O. H. Miller

Fayette.....	W. E. Walsh
Greene.....	Geo. W. Franklin
Henry.....	E. J. Lessenger
Ida.....	M. W. Grubb
Jasper.....	Harry P. Engle
Jefferson.....	J. S. Gaumer
Johnson.....	E. M. MacEwen
Keokuk.....	C. L. Heald
Lee.....	B. J. Dierker
Linn.....	J. K. von Lackum
	T. F. Suchomel
Louisa.....	L. E. Weber
Lucas.....	Lazear Throckmorton
Lyon.....	W. Vander Wilt
Madison.....	I. K. Sayre
Mahaska.....	W. N. Wright
Marion.....	C. S. Cornell
Marshall.....	A. D. Woods
Monona.....	E. C. Junger
Muscataine.....	L. C. Howe
Page.....	J. F. Aldrich
Plymouth.....	W. W. Larsen
Pocahontas.....	W. W. Beam
Polk.....	N. Boyd Anderson
	Clifford W. Losh
Pottawattamie.....	F. E. Bellinger
Poweshiek.....	S. D. Porter
Ringgold.....	E. J. Watson
Sac.....	J. R. Dewey
Scott.....	George Braunlich
	W. C. Goenne
Shelby.....	A. L. Nielson
Story.....	Bush Houston
Tama.....	A. A. Pace
Union.....	Cullen B. Roe
Wapello.....	E. B. Howell
Warren.....	C. A. Trueblood
Washington.....	W. L. Alcorn
Wayne.....	B. S. Walker
Woodbury.....	T. R. Gittins
Wright.....	R. D. Bernard

Alternate Delegates

Black Hawk.....	E. E. Magee
Boone.....	R. S. Shane
Calhoun.....	R. G. Hinrichs
Clarke.....	F. S. Bowen
Clayton.....	P. R. V. Hommel
Delaware.....	J. L. Keane
Dickinson.....	T. L. Ward
Harrison.....	E. J. Cole
Iowa.....	A. C. McKean

Jasper.....	J. C. Hill
Johnson.....	M. E. Barnes
Marion.....	D. S. Burbank
Mills.....	Dean W. Harman
Palo Alto.....	Geo. H. Keeney
Van Buren.....	C. R. Russell
Story.....	B. D. Atchley
Warren.....	J. F. Loosbrock
Webster.....	L. L. Leighton

Officers

President.....	E. M. Myers
Secretary.....	Robert L. Parker
Treasurer.....	Harold J. McCoy
Trustee.....	Oliver J. Fay
Trustee.....	John I. Marker
Councilor.....	L. R. Woodward
Councilor.....	F. P. Winkler
Councilor.....	E. B. Bush
Councilor.....	F. P. McNamara
Councilor.....	C. A. Boice
Councilor.....	H. A. Spilman

Councilor.....	J. G. Macrae
Councilor.....	M. C. Hennessy

President Myers. Next we will have the approval of the minutes of the Friday morning session, 1937.

Dr. James E. Reeder: I *move* that the minutes of the Friday morning session, 1937, be approved.

The motion was seconded, put to a vote and carried.

President Myers: Next is the report of the Secretary.

Secretary Parker: Mr. President, before giving my report I wish to *move* that all reports as published in the handbook be received by this body and be discussed in order.

The motion was seconded, put to a vote and carried.

Secretary Parker: I will then proceed with my report for 1937 as published in the handbook. I sincerely hope that you have all read that report.

Report of Officers

REPORT OF THE SECRETARY

To the members of the House of Delegates:

The following report for the year 1937 is respectfully submitted:

MEMBERSHIP

The membership record for 1936, as set out in the tabulated report*, may be summarized as follows:

Active Members (Life Members Included).....	2,379
Delinquent Members	56
Eligible Non-Members	220
Ineligible Non-Members	98
Physicians retired or not in practice.....	164

The central office would appreciate it if each county society secretary would check this list with his own figures, and notify us if our record does not check with his.

There are twenty-eight counties with one hundred per cent membership in the state society. They are as follows:

Adair	Marshall
Adams	Osceola
Audubon	Palo Alto
Boone	Poweshiek
Buchanan	Ringgold
Calhoun	Scott
Cerro Gordo	Shelby
Chickasaw	Story
Clarke	Tama
Emmet	Van Buren
Fremont	Washington
Howard	Webster
Ida	Winnesiek
Lyon	Wright

Your Secretary attempts to keep on file in the State Society office an accurate record of all members and other physicians throughout the state. Twice a year the county society secretaries are asked to

help the central office in checking the list with their own records. Their cooperation makes it possible for the central office to maintain a correct, up-to-the minute file of the state. A prompt report of all deaths occurring in the county societies, together with all removals or new physicians, is essential. The county society secretaries have rendered splendid service in keeping us informed of these changes in membership, and we appreciate their cooperation.

Dues for Life Members

We want to call attention again to the fact that, according to Constitution and By-Laws of the State Society, life membership in the State Society carries full privileges of membership but exempts the individual from the payment of dues. This means exemption from payment of county as well as state dues.

County Society Contracts

A survey of the different forms of county society contracts for the care of the indigent reveals the fact that the majority of the counties are no longer dependent on the state for funds to carry on this work. Many of the counties have returned to a type of service which is governed by a contract entered into by the county medical society and the board of supervisors. Some of these contracts are based on a fee schedule, and some on a lump sum payment. Many of them are working satisfactorily, but others do not have the support and enthusiasm of the medical society.

There is one thing which has been called to the attention of the Secretary, and that is that in those counties where there is an auditing committee of physicians which functions efficiently, the set-up is more satisfactory than in those counties where such an auditing committee is more nominal than real. It is the responsibility of the county medical society to audit the bills for medical service, and when

*See next page.

1937 MEMBERSHIP RECORD

County	1937 Membership	Delinquent Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage of Eligible Physicians Who Are Members
Adair	8	---	---	---	1	100
Adams	8	---	---	---	---	100
Allamakee	5	---	6	---	---	45
Appanoose	14	2	1	---	1	82
Audubon	10	---	---	---	---	100
Benton	18	---	4	---	1	81
Black Hawk	64	---	3	6	6	95
Boone	25	---	---	---	1	100
Bremer	15	2	---	1	---	88
Buchanan	21	---	---	1	2	100
Buena Vista	19	---	2	---	1	90
Butler	9	2	4	1	3	60
Calhoun	20	---	---	---	1	100
Carroll	23	1	3	2	3	85
Cass	22	---	1	2	2	96
Cedar	13	1	5	---	---	69
Cerro Gordo	47	---	---	2	---	100
Cherokee	16	1	5	---	1	73
Chickasaw	11	---	---	---	1	100
Clarke	8	---	---	---	---	100
Clay	11	1	4	2	---	69
Clayton	17	2	3	---	1	77
Clinton	46	---	4	2	2	92
Crawford	11	1	3	1	---	73
Dallas-Guthrie	38	1	9	2	2	79
Davis	12	---	2	---	---	86
Decatur	10	---	1	1	---	91
Delaware	14	1	5	---	1	70
Des Moines	37	---	6	1	1	86
Dickinson	12	1	1	---	---	86
Dubuque	65	1	5	---	2	91
Emmet	13	---	---	---	---	100
Fayette	15	6	9	1	2	50
Floyd	13	2	---	2	1	87
Franklin	11	---	1	---	---	92
Fremont	12	---	---	---	1	100
Greene	19	1	2	---	1	86
Grundy	9	1	1	---	---	82
Hamilton	13	2	4	---	4	68
Hancock-Winnebago	17	4	1	---	3	77
Hardin	26	---	1	---	3	90
Harrison	17	1	2	1	---	85
Henry	21	---	3	---	1	87
Howard	10	---	---	---	2	100
Humboldt	5	1	4	1	---	50
Ida	11	---	---	---	2	100
Iowa	12	1	3	---	3	75
Jackson	16	---	1	1	1	94
Jasper	30	---	2	---	1	94
Jefferson	17	---	2	1	2	89
Johnson	137	---	8	---	6	94
Jones	13	---	2	2	---	87
Keokuk	13	2	2	5	---	76
Kossuth	14	2	4	---	---	70
Lee	39	2	5	4	1	80
Linn	103	---	3	5	5	97
Louisa	3	---	7	1	1	30
Lucas	12	---	1	---	1	92
Lyon	9	---	---	---	1	100
Madison	12	1	---	---	1	92
Mahaska	22	---	1	2	4	96
Marion	19	---	2	---	8	90
Marshall	43	---	---	---	3	100
Mills	11	2	1	---	---	79
Mitchell	11	---	5	---	---	69
Monona	11	2	---	---	1	85
Monroe	5	---	6	---	---	45
Montgomery	21	---	1	---	---	95
Muscatine	23	3	---	2	2	88
O'Brien	18	---	2	1	---	90
Osceola	8	---	---	---	---	100
Page	22	---	4	2	1	85
Palo Alto	12	---	---	---	---	100
Plymouth	11	1	8	1	3	55
Pocahontas	13	2	1	1	---	81
Polk	227	2	20	11	42	91
Pottawattamie	62	---	2	3	2	97
Poweshiek	20	---	---	---	---	100
Ringgold	9	---	---	1	---	100
Sac	20	---	1	---	---	95
Scott	92	---	---	13	1	100
Shelby	10	---	---	---	2	100
Sioux	14	1	2	---	---	82
Story	36	---	---	---	3	100
Tama	29	---	---	---	2	100
Taylor	9	---	4	---	---	69
Union	15	---	2	2	1	88
Van Buren	13	---	---	---	---	100
Wapello	40	---	2	2	1	95
Warren	8	---	4	1	1	67
Washington	24	---	---	---	2	100
Wayne	9	---	3	---	1	75
Webster	41	---	---	---	2	100
Winnebago	14	---	---	1	---	100
Woodbury	119	---	3	6	5	97
Worth	4	---	1	---	---	80
Wright	23	---	---	1	1	100
Total	2,379	56	220	98	164	90%

this is properly done, there is less dissatisfaction, no matter what plan is in force in that county.

Another point which seems to merit consideration is that each county medical society should formulate its own fee schedule and be governed by it. Instances might be cited wherein the fees demanded for the care of indigent patients are higher than the fees charged private patients by the same physician.

The central office of the State Society does not feel that it should determine the fees for medical service for each county, nor dictate what plan of medical care should be followed. Conditions vary too greatly in the individual counties for any one plan to work equally well in all sections of the state. A plan which is successful in an urban county would not be suitable for a rural community. The State Society feels very strongly that it should act, through its central office, as a clearing house of information. It should have on file a copy of every county contract, and should know the good and bad points of each contract. It should be ready to furnish information regarding all plans whenever such a request is made. Only by an accurate and complete compilation of data regarding county society contracts will it be possible to determine what plans will work to the best interests of all concerned.

State Society Services

I should like to urge that the central office be made a clearing house wherein all societies would list openings which occur in their counties, and to which all physicians seeking a location might come. I believe we could serve a useful part in shifting applicants to those counties in which they might find a suitable location. I should like to ask the House of Delegates to consider this matter.

Remember, the central office of the State Society is your office. It exists for the help and benefit of every member. We urge you to use it as a clearing house for your problems and interests. Visit it when you are in Des Moines—call upon it for help at any time.

Financial Report

The financial report required of the Secretary is covered by the Treasurer's report which follows. This year the income and expense account is given in a summarized form for your convenience, so that you may see at a glance through what committees and what channels expenditures are being made. The books of the society have been audited by a certified public accountant, Mr. Mills of Widdup and Company, and a copy of his report is on file in the office of each trustee and in the central office. Any physician wishing to see this detailed report is welcome to visit one of these offices at any time and have free access to the report.

Robert L. Parker, Secretary

In addition to the report as published, I wish to make a little supplementary report. First, on mem-

bership, to show that we are constantly growing, our membership for 1937 was 2,379; for 1936, 2,355; for 1934, 2,211. The number of 100 per cent counties has been gradually increasing. In 1934 we had fifteen counties with 100 per cent membership; in 1935, twenty-one counties; in 1936, twenty-five counties; and in 1937 we have twenty-eight counties with 100 per cent membership. The number of delinquent members has been decreasing constantly, and the number of eligible non-members has been decreasing constantly. We have a possible number of something over 2,600 from which to secure our membership. Today we have, for 1938, 2,150 members. I sincerely hope to reach 2,400 before our fiscal year closes. For fear that you all have not read that part of the Secretary's report mentioned in the second paragraph, "County Society Contracts," I wish to read it.

Dr. Parker read that portion of his report dealing with county society contracts.

I move, Mr. President, that my report as published in the Handbook be approved.

The motion was seconded and carried.

President Myers. Next in order is the report of the Treasurer.

REPORT OF THE TREASURER

House of Delegates, Iowa State Medical Society:

The financial statement of the Society for the year 1937 is herewith respectfully submitted. The books and accounts of the society have been audited by a certified public accountant, and his detailed report is on file in the offices of the three trustees, John I. Marker at Davenport, John C. Parsons at Des Moines, and Oliver J. Fay, Des Moines, as well as at the central office. Any physician wishing to see the detailed report is invited to inspect the one nearest him.

For the sake of clarity and brevity, a concise financial statement is given below:

INCOME AND EXPENSE ACCOUNT

For the Year Ended December 31, 1937

INCOME

Dues	\$21,950.00
Advertising	6,350.00
Reprints	1,187.24
Miscellaneous	49.35
Total	\$29,536.59

Speakers Bureau

Fees	\$2,985.29
Travel Expense Refund.....	56.95
Annual Session	3,042.24
Returned Check Payment.....	2,560.27
Interest on Savings Account	5.00
Interest from Bonds	75.71
	1,348.00

TOTAL INCOME\$36,567.81

EXPENDITURES

Administrative Miscellaneous	\$ 992.68
Rent and Office Supplies.....	1,913.61
Stationery and Printing.....	633.30
General Salaries	4,945.00
County Society Services.....	118.45
Trustees	212.50
Council	916.14
Medico-Legal Committee	380.95
Legislative Committee	4,308.38
Medical Economics Committee	258.85
Other Committees	680.60
Annual Session	3,219.76
Journal Printing and Engraving.....	11,258.09
Reprints	956.01
Bank Charges	4.33

Total\$30,798.65

Speakers Bureau

Salaries	\$1,514.00
Travel Expense for	
Speakers	932.92
Postgraduate Courses,	
Travel Expense	1,954.77
Radio Talks	69.45
Cancer Talks	72.57
Stationery, Printing,	
Telephone, etc.	1,047.57
Miscellaneous	150.27

Total 5,741.55

TOTAL EXPENSES\$36,540.20

EXCESS INCOME OVER

EXPENDITURES\$ 27.61

Investments and total funds are shown in the following analysis and summary:

Net Income for year 1937, as shown above..\$	27.61
Cash in Banks beginning of year 1937.....	6,505.48
Treasury Bonds on Hand at beginning of year	39,601.53

Total Funds\$46,134.62

Represented by:

Cash in Bank:

Bankers Trust Co. Bank	
(Treasurer's Account)....\$	58.22
Bankers Trust Co. Bank	
(Secretary's Account)....	4.26
Bankers Trust Co. Bank	
Savings Account).....	1,581.05

Total Cash in Banks.....\$ 1,643.53

Treasury Bonds:

3% Due 9-15-55 (Par	
Value)	\$ 9,000.00
3½% Due 3-15-43 (Par	
Value)	25,500.00
2¾% Due 6-15-54 (Par	
Value)	5,000.00
2½% Due 12-15-53 (Par	
Value)	5,000.00
Less discount on purchase	
of Bonds	8.91

Total Treasury Bonds (Cost)..... 44,491.09

TOTAL CASH AND BONDS (As above)....\$46,134.62

Harold J. McCoy, Treasurer

Treasurer McCoy: I move the adoption of this report.

The motion was seconded and carried.

President Myers: Report of the Board of Trustees.

REPORT OF THE BOARD OF TRUSTEES

A complete report of the activities of the Board of Trustees will be found in the Journal, in which are recorded the minutes of all meetings held during 1937. Consequently, only a brief summation of the Board's work is contained in this report. However, the trustees of the Iowa State Medical Society wish to express their appreciation of the cooperation they have enjoyed from the Council, the various officers, committees and members of the State Society during the past year. It is very gratifying to feel that every individual and every committee are working in conjunction with the others toward a more unified and at the same time a more diversified society. Diversification of interest will always be present in medical lines, and we are happy that it can be, and yet be compatible with an absolute unity of basic beliefs.

In furthering these diversifications of interest in accordance with its constitutional duties, the Board of Trustees is glad to report that the finances of the society are sound. The budget system which was adopted some years ago has again vindicated itself, the predicted and actual expense for the year being remarkably close. (The net income for the year was \$27.61.) Because of the proximity of the estimated and actual expense, it is recommended that the per capita assessment for 1939 remain at \$10.00.

The stewardship of the society's funds is the duty of the trustees, who feel that the responsibility of passing on the finances of the society should not be undertaken lightly. Some discussion arose during the year over the question of using society funds for publishing manuals prepared by various committees. Upon investigation, however, it developed that one printing would not suffice, but that additions would have to be made from time to time, and the trustees, after due consideration, came to the conclusion that the best interests of the society as a whole would not be served by diverting any portion of its funds to the publication of manuals or handbooks.

During the past year the personnel of the office force has been revised, due to two resignations. Mary McCord was chosen as executive secretary when Dorothy Nelson moved to New York City, and was replaced in the Speakers Bureau by Patricia Spaulding. Dorothy Dolk succeeds Grace McDonald, who was married in October.

We wish to voice again our appreciation of the cooperation we have received throughout the year. Such cooperation between the various officials, official groups, and members cannot help but bind the members closer and make a stronger and better society.

O. J. Fay, Chairman
John I. Marker
John C. Parsons

Dr. O. J. Fay: Mr. President, I move that the report as published in the handbook be approved.

The motion was seconded and carried.

President Myers: Report of the Council.

REPORT OF THE CHAIRMAN OF THE COUNCIL

During the course of the year 1937 the Council met on three occasions to transact routine business. Nothing that required action of the Council occurred during the months following the state meeting other than the Council's supervising duties of the activities of the Speakers Bureau and the Cancer Committee. The Council met once during the year with the other officers of the Society as a part of the Executive Council authorized at the Sioux City meeting in May, 1937.

I refer you to the reports of the chairman of the Speakers Bureau and the Cancer Committee for a detailed description of their activities, and to the reports of the individual councilors as to the activities of the various districts composing the State Society.

M. C. Hennessy, Chairman of the Council

REPORTS FROM COUNCILOR DISTRICTS**First Councilor District**

The following individual reports from counties in the first councilor district are hereby respectfully submitted.

F. A. Hennessy, Councilor

Allamakee County. The Allamakee County Medical Society had three more members during 1937 than in the previous year. Two physicians, both of whom were non-members, moved from the county. There were no losses because of death.

The Iowa Emergency Relief Administration program was in force during 1937. This has worked fairly satisfactorily.

None of the members attended postgraduate courses. The county society sponsored no public health programs, and we have no interprofessional association nor Woman's Auxiliary.

John W. Thornton, Deputy Councilor

Bremer County. The Bremer County Medical Society held monthly scientific meetings during the past year, and many physicians attended the postgraduate course held at Waterloo.

Two more towns have sponsored a program for vaccination against smallpox and immunization against diphtheria. The school children at Waverly were given a tuberculin test and follow-up x-ray examination when necessary.

The society lost one physician by removal, and gained one, who is not yet a member. There were no deaths among physicians during the past year.

The relief program is the same as in previous years, and has been satisfactory.

An interprofessional society was organized late in the year, and plans to hold several meetings during 1938.

Bremer County has no Woman's Auxiliary.

E. C. Kepler, Deputy Councilor

Chickasaw County. The Chickasaw County Medical Society has two new members and one transfer from another county. There were no deaths or re-

movals during 1937. Membership of those eligible is one hundred per cent.

Our medical relief program is supplied by county funds, and is no longer associated with the state. It is under the supervision of a relief worker. The amount set aside per month is \$375.00, which may not be exceeded. The fee schedule in operation is that of the Iowa Emergency Relief Administration. The plan seems to be satisfactory to most of the members.

Three members of the county medical society attended postgraduate courses at Waterloo and Osage.

There was no public health program during 1937, but plans are now being made to carry out a tuberculin testing and diphtheria immunization program during 1938.

We have no interprofessional organization, nor Woman's Auxiliary.

We plan to become more active this year, and hold more meetings than in the past.

Paul E. Gardner, Deputy Councilor

Clayton County. Membership in the Clayton County Medical Society increased by two during 1937. All old members remained in good standing, and there were no removals or deaths. One new physician located in the county.

The Iowa Emergency Relief Administration plan is in force in Clayton County, and it is not very satisfactory, because the physicians do not receive adequate compensation for services rendered. The plan is tolerated for want of anything better.

An interprofessional society was formed during 1937.

J. W. Hudek, Deputy Councilor

Fayette County. There were sixteen members of our society in 1937, a decrease of three from 1936. Our medical relief set-up is unsatisfactory.

Two of our members attended postgraduate courses during the year. We had no public health programs, and we have no interprofessional organization or Woman's Auxiliary.

C. C. Hall, Deputy Councilor

Floyd County. Floyd County Medical Society had one hundred per cent membership again in 1937. We had one new member, and no removals during the year.

The medical relief plan in force is on the basis of a reduced fee schedule. It is working satisfactorily.

We held monthly meetings of the medical society, which were well attended. Several of our members attended postgraduate courses at Osage, Waterloo, and Mason City.

Ray A. Fox, Deputy Councilor

Howard County. The membership in the Howard County Medical Society increased by two members during 1937. There were no removals or deaths.

Our medical relief plans follows the original state program, but it is entirely local now and does not get state aid. It is satisfactory.

Four of our members attended the postgraduate course at Osage. We did not sponsor any public health program during the year.

We have neither an interprofessional association, nor a Woman's Auxiliary.

Wm. A. Bockoven, Deputy Councilor

Mitchell County. The Mitchell County Medical Society continued its established custom of holding monthly meetings during 1937. There were no new physicians locating in the county, nor were there any deaths. The membership increased by two.

Our medical relief plan continues to be very satisfactory, with a good relationship between the county society and the county relief officers.

We held a "refresher" course in obstetrics and pediatrics at Osage which was very well received. There were twenty-five physicians enrolled.

The medical society sponsored a tuberculin test in the upper six grades of all public and rural schools, with x-ray interpretations of positive reactors. This program had a very gratifying reception, which is due to the excellent cooperation of the school officials, the members of the faculties, the county school superintendent, and the officials of the Red Cross.

Our county does not have an interprofessional organization or Woman's Auxiliary as yet.

T. S. Walker, Deputy Councilor

Winneshiek County. The Winneshiek County Medical Society and the interprofessional organization carried on as usual, with regular meetings during 1937. Our medical relief plan is similar to that of the Iowa Emergency Relief Administration, but is paid out of county funds. The plan seems to be working very satisfactorily.

An orthopedic clinic was held at Decorah in November, at which time one hundred and fifty-two patients were examined. This clinic received the strong support of the medical profession and the public, and we are very grateful to Dr. Arthur Steindler, Dr. D. N. Gibson, and Dr. E. M. MacEwen for their help in making the meeting a memorable one.

Arthur F. Fritchen, Deputy Councilor

Second Councilor District

During 1937 the only project of the district as a whole was the Orthopedic Clinic held under the auspices of the orthopedic department of the College of Medicine of the State University of Iowa, and paid for by federal funds designated for the aid of crippled children. All of the doctors in the district cooperated; clinics were held at Algona, Forest City, and Mason City, with a total of three hundred and seventy-six patients seen.

There were two postgraduate courses held in the district during the year, one at Mason City in the spring, and one at Algona in the fall.

The councilor visited each county in the district at least once during the year, and found conditions the best they have been in years.

L. R. Woodward, Councilor

Butler County. During recent years, including 1937, the Butler County Medical Society has functioned mainly for the sake of organization and business purposes. This has been due to the fact that the various towns are nearer larger centers than they are to each other, and it has been found much more practical, for scientific purposes, to attend the larger centers rather than to attempt to carry on scientific programs within the county itself.

During the year we lost one member by death. Two new physicians located in the county, one of whom has joined the society. Medical care of the indigent has been on a fee basis, and the results have been satisfactory. Many members have attended postgraduate courses outside of the county. Only one meeting has been held by the society, the business and annual meeting held in December for organization purposes.

The society has conducted two immunization campaigns which were successful. Various members of the society have given talks to lay groups. An interprofessional association has been formed, but is not very active to date. We have no Woman's Auxiliary.

H. G. MacLeod, Deputy Councilor

Cerro Gordo County. The Cerro Gordo County Medical Society lost one member by death during 1937. The membership continued to be one hundred per cent, as it has in the past. The arrangement with the board of supervisors for care of the indigent remains the same, and is very satisfactory to all parties.

We conducted a postgraduate course in general therapeutics in the spring of 1937, at which the average attendance was fifty-seven physicians. This course was felt to be very much worthwhile. Some of the younger physicians of the county meet weekly, at which time one individual is assigned to review some of the recent literature. This is becoming a very popular and stimulating meeting.

The society conducted an immunization campaign against diphtheria and smallpox early in 1937. The work was done in the physicians' offices, a much more satisfactory procedure than trying to do it in the school houses. The campaign was very well received, and most of the children were immunized. In cooperation with the board of supervisors, a health camp was maintained at Clear Lake during the summer at which about thirty undernourished tuberculin-positive children were cared for. The possibility of making this a permanent venture is under consideration. Much effort has been spent by the society to arouse interest in cancer education. The members of the society have given many talks on this subject, as well as on the venereal disease control program.

The society has worked out a credit rating system which has been a help in handling poor accounts, and is now working on some method of caring for the low income group.

Scientific meetings are held monthly, with one local and one outside speaker.

H. W. Morgan, Secretary

Franklin County. The Franklin County Medical Society has a membership of thirteen with two new members this year—Ira Marble of Sheffield and W. L. Randall of Hampton. There were no deaths or removals. Two meetings were held during the year.

Medical relief and county relief are carried by the county. The plan is not very satisfactory. Four members have taken postgraduate courses. No public health program was held except for general smallpox vaccinations in the county. We have no interprofessional organization.

J. C. Powers, Deputy Councilor

Hancock County. We lost one member by removal during 1937, and one physician retired from active practice. Two members who had belonged in 1936 did not pay dues in 1937. The society cooperated with the orthopedic clinic which was held at Forest City.

W. F. Missman, Secretary

Humboldt County. The Humboldt County Medical Society lost one member by death, Dr. W. M. Shipley of Ottosen. One membership was renewed after having lapsed for several years. Medical relief in the county is carried on under a straight fee schedule adopted by the county medical society and the county board of supervisors. Claims are handled through the county relief office, and the plan has worked out very satisfactorily.

Every member of the society has attended at least one postgraduate course during the year. The society has cooperated with public health agencies in promoting a countywide tuberculin testing program. The publicity given the test in the towns provoked a similar test in one of the country districts, at which ten reactors were found out of the fifteen taking the test. In the follow-up, many improvements were made in health conditions in that district. A Dick testing program was carried on in the Humboldt parochial and public schools in the fall. In addition to this public health work, several talks were made to various organizations on health subjects.

The interprofessional society is not active in this county at present, and there is no Woman's Auxiliary.

Ivan T. Schultz, Deputy Councilor

Kossuth County. The Kossuth County Medical Society gained one more paid member during 1937 than it had had in 1936. There were no deaths or removals. The medical relief set-up continues unchanged from 1936, and is working satisfactorily. The county medical society sponsored a postgraduate course in the fall of 1937, at which the average attendance was forty-eight. The individual members were active in disseminating information regarding cancer and venereal diseases, giving many lay talks to various organizations. The society has authorized a tuberculosis program which is to be inaugurated early in 1938.

C. H. Cretzmeyer, Deputy Councilor

Winnebago County. There was no change in the membership of the county society by reason of death or removal, but two members failed to pay dues during 1937. Members attended postgraduate courses

in other centers. We have a contract for care of the indigent, which is based on half of the state fee bill. The society sponsored an immunization campaign, but did not give any lay talks during the year. We have no interprofessional organization, nor Woman's Auxiliary.

T. J. Irish, Deputy Councilor

Worth County. We lost one member by death, and had one new physician locate in the county during 1937. Our medical relief set-up remains the same and is working satisfactorily. The county society sponsored some immunization against diphtheria, and gave several lay talks.

S. S. Westly, Deputy Councilor

Wright County. Membership: Two new members, R. L. Gorrell of Clarion and Ivan H. Rarick of Eagle Grove, have been received into full membership. One of our regulations for membership requires that the applicant be received on one full year's probation before becoming a full member. One member, Dr. E. C. Sage, from Eagle Grove, left the county.

Medical relief set-up: The members of the society made an agreement with the members of the county board of supervisors to do the medical and surgical relief work at a reduced price, taking as our guide the medical relief plan of the Iowa Emergency Relief Administration adopted at Des Moines in April, 1935. We have an auditing board consisting of the deputy councilor, the president and the secretary of the county society. This committee meets once a month and audits the bills for medical, surgical, and obstetrical services for the month. These bills are sometimes increased, but more often decreased. The committee's action, however, is final. The bills are then certified to the board of supervisors, and the amounts as audited are paid. This committee is the judge of whether a given case should be given hospital care or not. Some member of it is also consulted before a so-called emergency case is operated, or hospitalized. The dentists were invited to have a representative on the auditing board, but the invitation has never been accepted, and the physicians act on the dental bills, which so far seems to have been satisfactory. The applicant for medical relief must have an authorization from the county relief head, certifying that the individual is on relief, before any bill for such services as above described will be considered by the auditing committee. So far there have been no complaints either from the board of supervisors or from any member of the society.

Postgraduate work: Four members of the society have been in attendance (regularly) at clinics held in Algona, and several more have been in irregular attendance at such clinics.

Public health programs: Immunization programs, put on by the public schools in Clarion, Eagle Grove, Dows and Rowan, for the purpose of immunizing against diphtheria and smallpox, have had the cooperation of the members of the society, the schools furnishing the material and the physicians doing the work, at their own offices, for those presenting

themselves, but at stated times and for a fee stated by the physician, which fee was supposed to be uniform. Two child health clinics were sponsored by the Wright County Medical Society, cooperating with other counties in this councilor district. In reality these were orthopedic clinics, presided over by Dr. Steindler of the State University. These clinics were well attended and if follow-up work is done, I am convinced that much good will come of them, both to the physicians of the district and to their patients. No radio talks have been given, but one or two talks to various organizations have been given by members of the society on matters relating to public health.

There have been no interprofessional meetings held during the past year, although such an organization exists. We have no Woman's Auxiliary.

A general countywide tuberculosis program is to be instigated early in 1938, as is a "refresher" course.

J. H. Sams, Deputy Councilor

Third Councilor District

A review of the work in the third councilor district in the past year shows an increase in membership as well as in the interest taken in organized medicine. Several of the counties are having regular monthly meetings. Their programs are both social and scientific. Four of the counties have a full-time public health nurse; and two other counties have completed arrangements for public health nurses and will soon have the service.

The third councilor district sponsored an orthopedic clinic under the supervision of the University Hospital and in charge of Dr. Arthur Steindler, in July. One clinic was held at Estherville at the Estherville Hospital; and one at Sheldon at the Good Samaritan Hospital. More than one hundred and fifty orthopedic cases were examined in each hospital; the largest number seen at such clinics throughout the state.

Dr. C. K. McCarthy of the State Department of Health (Tuberculosis Division) conducted fact-finding clinics in five of the counties with excellent co-operation, both on the part of the medical profession and the public.

An eight lecture postgraduate course, under the direction of the Speakers Bureau, was held at Sheldon late in the fall, and this was unusually well attended by the doctors in the district. The speakers were excellent and were much appreciated.

The American Society for the Control of Cancer and the Women's Field Army have completed their organization in the third district under the direction of Mrs. W. Vander Wilt and are anticipating great results.

The following deputy councilors are submitting their reports. These reports show a healthy condition of each county in the district.

Frank P. Winkler, Councilor

Clay County. During the year 1937 one new physician, Dr. Frank Edington, has located in Spencer, and has been elected a member of the Clay County Medical Society. No members have moved away, and there were no deaths among physicians of the county.

The medical society has had several business meetings during the past year, at which times various medical cases were discussed informally.

The medical set-up for the care of indigent patients is the same plan that has been followed for several years. For 1938 the physicians receive the sum of \$325 per month, and one-third of the schedule recommended by the Medical Economics Committee of the State Medical Society. The county furnishes serums, liver extract, and insulin.

A committee from the medical society audits the bills each month. The board of supervisors flatly refuse to consider entering into a contract on a fee basis.

There has been a tuberculosis case finding program in progress this winter.

There is no Woman's Auxiliary in Clay County.

J. M. Sokol, Deputy Councilor

Dickinson County. Our county medical society enrolled two new members in 1937, and lost two, one by death and one by removal from the county.

Our medical relief plan is based on a straight fee basis, and is working satisfactorily. The county society conducted an immunization program against smallpox and diphtheria in all schools in the county at a very low fee. We have no interprofessional organization, nor a Woman's Auxiliary.

Several members of the Dickinson County Medical Society attended postgraduate courses and medical meetings in the vicinity.

C. G. Nicholson, Deputy Councilor

Emmet County. The membership in Emmet County has remained the same during 1937 as in the previous year. Our medical relief set-up is under the dictation of the board of supervisors. They have allotted \$7,900.00 to cover hospital care, nursing, drugs and appliances, and medical care.

Four members of the county medical society attended postgraduate courses at Algona and Sheldon. We have had no public health program, and no interprofessional association. Our Woman's Auxiliary is not very active.

The Emmet County Medical Society meets monthly in conjunction with the Dickinson County Medical Society. Programs are scientific in nature, with papers prepared for the most part by members, with occasionally outside speakers invited. The meetings have been very profitable to all of us.

M. T. Morton, Deputy Councilor

Lyon County. Lyon County had nine men in active practice, all of whom were members of the Iowa State Medical Society. Dr. Stanley Moen was a newcomer during the year, coming to take care of Dr. Sporre's office in his illness.

Monthly meetings were held during the year, and

in addition six of our members attended the post-graduate course at Sheldon.

For years we have had a mutually satisfactory arrangement with the county supervisors which allows indigents free choice of physicians. The county is given a discount from the regular fee in certain cases, and our bills are handled through the social service office.

We are gradually getting away from public clinic work. However, we have offered our services free for a countywide Schick test in the spring of 1938. We are making this offer once for statistical purposes.

L. L. Corcoran, Deputy Councilor

O'Brien County. The O'Brien County Medical Society approved the project of Dr. Steindler's Mobile Clinic and held an examining clinic at the Good Samaritan Hospital in Sheldon July 23, covering the territory of the four northwest counties. Many doctors from the four counties attended. Later in the year the county society backed the tuberculosis control program of the State Department of Health. Late in the fall and early winter an eight lecture postgraduate course was presented under the supervision of the Speakers Bureau of the Iowa State Medical Society. The attendance was much larger than usual, and those who appeared on the program were especially talented teachers.

Classes in motherhood, conducted by the county nurse, were approved by the society. Certain other programs, promoted by various interests, have been considered but definite action has been postponed.

During March a drive for smallpox vaccination in O'Brien County by the county medical society, aided by the State Board of Health, accomplished a great deal. Many people were vaccinated as a result of the campaign.

Several meetings were held during the year, devoted to business or to promoting health programs. There was no loss of membership by death or removal. One membership was added, that of Dr. L. E. Hudgel of Hartley.

W. R. Brock, Deputy Councilor

Osceola County. Osceola County is again in the one hundred per cent membership column. The past year has been an active one. Several meetings, regular and special, were held. Most of these meetings were called for the purpose of discussing medical problems of vital importance: such as the Committee of 430 Physicians and the Kilgore letters; and the address delivered by Sen. J. Hamilton Lewis of Illinois before the House of Delegates of the American Medical Association.

Public health problems in our county were given considerable discussion, and a countywide immunization program was carried out under the direction of the county medical society and the county health nurse.

Dr. C. K. McCarthy conducted a tuberculosis fact finding clinic in January. Sixty patients were examined and x-rayed.

Osceola County, together with the other three counties comprising the Northwest Iowa Medical Society, have a very active Woman's Auxiliary. Two meetings were held at Sheldon during the past year and were well attended. The Auxiliary sponsored an essay contest in which all the pupils in the high school of Sibley wrote a thesis upon the subject, "Highway Hazards." Two public health talks were given by members of the society in 1937. Osceola County does not broadcast public health talks. The plan for the care of the indigent is an agreement between the board of supervisors and the physicians of the county on the same basis as 1935-36.

No deaths have occurred in the profession.

Dr. O. E. Holm located at Sibley but remained for only four months.

Frank Reinsch, Deputy Councilor

Palo Alto County. Palo Alto County is one hundred per cent in membership in the State Medical Society. We have thirteen members, one of whom was new in 1937.

Our medical relief set-up is one in which the county board of supervisors adjusts fees for the care of the indigent.

We held no postgraduate course in our county during 1937, but attended the one held in Algona. We held six meetings during the year, and also participated in the meetings of the Upper Des Moines Society.

The society cooperated with the Parent-Teacher Association in the Summer Round-Up Examinations, conducted examinations of the 4-H Club boys and girls, and through its individual members gave talks to women's clubs, parent-teacher associations, and other lay groups.

Harold L. Brereton, Deputy Councilor

Pocahontas County. Two new physicians located in Pocahontas county during 1937, and one physician died. Meetings were held once a month during the year. These were both scientific and business in nature. About twenty per cent of the members attend the meetings. About ten members attended postgraduate courses during the year.

Our medical relief set-up is the same as has been in force for two years—an agreement between the board of supervisors of the county and the county medical society.

Immunization work was done individually by each physician in his respective district during the year. There was no other public health program, and none of the physicians gave public health talks. We do not have a radio station. There is no Woman's Auxiliary, or interprofessional association, in our county.

J. H. Hovenden, Deputy Councilor

Sioux County. The Sioux County Medical Society lost one member through death during 1937. Five meetings were held, some entirely scientific in character, and some business meetings. The society endorsed a plan of having a county public health nurse. It has also cooperated in a drive for a municipal and memorial hospital at Orange City. This would give

us a fifteen or twenty bed hospital of fireproof construction.

John G. DeBey, Deputy Councilor

Fourth Councilor District

The following reports have been received from the various counties in the fourth district.

James E. Reeder, Councilor

Buena Vista County. We have a membership of sixteen. We lost one member, Dr. Glesne, by removal from the county, and gained one new member, Dr. Hansen, who is associated with Dr. Porath. We have two physicians in the county who are not members of the society, both of them somewhat inactive in practice.

Medical relief work in this county is on a fee schedule with the board of supervisors. This has been very satisfactory to all persons concerned, and we feel that the indigents are being well cared for, at a reasonable cost.

Several of our members attended the postgraduate courses held in nearby towns. Immunization programs have been carried on at Alta, Storm Lake, Albert City, Sioux Rapids, and Linn Grove during 1937. The society sponsored and actively aided the cancer program. Two members have given lay talks under the sponsorship of the Speakers Bureau.

Three years ago, a tri-county interprofessional society, comprised of Humboldt, Pocahontas and Buena Vista Counties, was formed. Dr. Campbell of Sioux Rapids was elected president. The skeleton organization still exists, but it is now inactive.

We have no Woman's Auxiliary.

H. E. Farnsworth, Deputy Councilor

Cherokee County. Our membership is composed of fifteen members. We gained one new member during the year, and did not lose any either by death or removal. Meetings were held the second Monday of each month except during June, July and August. At these meetings, scientific papers were presented, and case reports given. Average attendance was ten, and visitors from neighboring counties were usually present.

Our medical relief set-up is unsatisfactory. We accept what is tendered us by the board of supervisors, but it is too low.

We held no postgraduate course in this county, but two members attended the meeting of the American College of Surgeons. We cooperate with the public and parochial schools to keep all school children immunized against diphtheria and smallpox. Two lay talks were given during the year. We have no interprofessional association and our Woman's Auxiliary is inactive.

Chester H. Johnson, Deputy Councilor

Crawford County. The membership of the society remained the same in 1937 as in 1936, one physician having removed and another having located in our county, who applied for membership and was accepted.

Relief work was carried on until April 1 under the IERA plan, which proved unsatisfactory to every

member. At that time the board of supervisors agreed to pay the members in full for the work done according to a fee schedule which was agreed upon. This was much more satisfactory.

We had six meetings during the year in which scientific and business interests were combined. We voted to join the Twin Lakes Medical Society, and several of our members attended the meeting at Rockwell City, Iowa. A number of other meetings were also attended by our members. One member took postgraduate work at Harvard Medical School. A "refresher" course in obstetrics and pediatrics was well attended.

A second annual series of one hour lectures to high school students for 1937-38 was started. The plan is to make this an annual project, with lectures given periodically in nine schools during the school year, so that graduating students will have had thirty-six hours of public health lectures. Each year the subjects will be changed. The subjects and speakers are: "Infection Resulting from Injuries," Ralph E. Haskell, CCC physician; "Diseases and Care of the Ear, Nose and Throat," Simon A. Huber, Charter Oak; "Venereal Diseases," E. J. Maire, Vail; "Diseases and Care of the Skin," Edw. M. Mark, Manilla; "Diseases and Disorders of the Heart," C. L. Sievers, Denison; "Diseases, Defects and Care of the Eyes," F. N. Rowe, Denison; "Tuberculosis in High School Age," T. L. Vineyard, Dow City; "Infectious Diseases of the Respiratory Tract Other Than Tuberculosis," Dora Kielhorn Zaeske, Charter Oak; "Epidemic Infections of the Central Nervous System (Infantile Paralysis and Spinal Meningitis)," J. James Duffy, Denison.

Schools of the following towns are on the list: Westside, Vail, Schleswig, Manilla, Kiron, Dow City, Denison, Deloit and Charter Oak.

Aside from the above a number of talks have been given at club and society meetings, principally on cancer and syphilis.

A baby clinic was conducted at Westside in which many of the physicians and dentists participated.

Immunization of school children has been carried on, but the proposal of a tuberculin test of school children was rejected.

The best attended meetings of our society were those of the "refresher" course, when many physicians from other counties were present. Since then the attendance at meetings has been only fair. We may possibly combine our meetings with those of some adjoining county.

C. L. Sievers, Deputy Councilor

Ida County. Membership: Increase in membership, none; decrease in membership, none.

Dr. Chester L. Putnam has discontinued practice at Holstein to be a field officer of the Iowa State Board of Health. Dr. Putnam remains a member of the Ida County Medical Society.

Dr. Joseph H. Holleman, graduate of Harvard Medical School and Boston City Hospital, has taken over Dr. Putnam's practice at Holstein. He has ex-

pressed a desire to become a member of the County Society.

Dr. James W. Martin, graduate of the College of Medicine, University of Nebraska, late superintendent and medical director of Douglas County Hospital, Omaha, has located at Holstein. He expects to join the County Medical Society.

Maple Valley Hospital and Clinic, a modern twenty-bed institution, was constructed at Battle Creek by Drs. Hartley and Millice during 1937 and is now in service.

Medical Relief: By agreement between the Ida County Medical Society and the board of supervisors, the indigents are attended by their physician of choice. Bills are rendered, itemized, and an agreed discount is subtracted at the foot of the bill. An agreed maximum fee is stipulated by the board of supervisors for surgical cases. The board of supervisors retains its right to call a physician of its choice and to call for advice from members of the county society in disputed matters. The agreement is satisfactory.

Postgraduate: No postgraduate course was held in our vicinity during 1937. Practically all of the members attended courses at Cherokee in 1935 and at Denison in 1936.

Public Health: Diphtheria immunization was carried out in all town schools by members of the county society under a working agreement with the respective school boards. By special arrangement, pupils from rural schools were immunized at low cost. Pre-school infants were immunized at the same time. This program has been carried out for the past several years and has proved satisfactory.

Women's clubs have had health talks in a few instances. No public child health clinic was held during 1937.

Interprofessional organization is not perfected. There is no Woman's Auxiliary.

E. S. Parker, Deputy Councillor

Plymouth County. There was no change in the membership of the Plymouth County Medical Society.

The indigents in Plymouth County are cared for by flat rate contracts let for five separate districts. No complaint was made of this system. The low income group problem is still unsolved.

Several members participated in local or other postgraduate courses. Public health programs were sponsored by the society. Group immunization in the schools was discouraged, and in its place a program of vaccination in the doctors' offices was substituted at a special reduced price between certain specified dates.

Talks to lay societies were sponsored on the subjects of cancer, sinus infections and sex education. An interprofessional dinner and meeting was held in Le Mars. No progress was made in the organization of a Woman's Auxiliary.

W. W. Larsen, Deputy Councillor

Sac County. The Sac County Medical Society maintained its usual high level during 1937, if the meetings may be judged by frequency, attendance, scientific attainments, and sociability. There were eight meetings held during the year, with attendance always being well over seventy-five per cent of the regular members.

The highlight of the year socially was reached on December 13 when the doctors and their wives attended a 6:30 dinner at the Park Hotel in Sac City in honor of three members who had been voted life memberships in the Iowa State Medical Society. W. J. Findley and J. H. Stalford of Sac City and L. H. Jones of Wall Lake were the honored guests, and their reminiscent tales of thirty-five years as members of the society were much enjoyed. The ladies present organized an Auxiliary to the County Society and elected officers: President, Mrs. J. R. Dewey; vice president, Mrs. L. B. Amick; and secretary-treasurer, Mrs. James McAllister.

Dr. Charles K. McCarthy spoke on the tuberculosis program, and the society approved the project for Sac County, to be carried out in March, 1938.

The society adopted a resolution condemning the use tax.

May 17, 1937, the society held a social night at which time Dr. Fred Knowles of Fort Dodge showed films he had taken on a trip through Old Mexico, and Dean E. M. MacEwen of the College of Medicine, spoke on the subject: "The Relation of Medical Education to the General Practitioner in Iowa."

The Sac County Medical Society adopted a different attitude toward immunization programs this year. A survey was made of all the schools to determine the number of those immunized and vaccinated, and those who had not been so treated. Publicity material for use in the papers of the county was prepared in the hope that parents would bring in their children for the work without all the ballyhoo of the "Free Immunization Program," in which the medical profession usually donates all or part of its services. It is too early at this time to give the results of the plan.

A movement was started this year to have the society members speak on appropriate medical subjects in the schools of the county. The physicians have indicated their interest and willingness to serve. Due to a late start and the rush of other matters, the program was not inaugurated in 1937 but will be ready in the fall when the schools open.

J. R. Dewey, Deputy Councillor

Woodbury County. Five new physicians were admitted to the county society. Three members were lost through death and four members moved away. We have six life members.

Ten county society meetings were held. Eight of these were combined business, scientific and social, two were purely social. They were attended by an average of seventy members.

Activities of County Society: The society carried on the immunization of 1,259 persons for diphtheria

and vaccinated 1,503 for smallpox. Our Welfare Clinic with its pharmacy was staffed and operated by the society. A physicians' telephone exchange was maintained and house calls to the indigent were made by members of the society. A tuberculosis sanitarium for adults and a preventarium for children were supervised by the society members. Four speeches on health, two radio talks and five moving pictures were shown as part of our health program. Our society has a contract with the board of supervisors to care for the indigent sick of this county. The society was host in May, 1937, to the state medical meeting held in Sioux City.

We have a Woman's Auxiliary to the Woodbury County Medical Society. It is purely social and meets four times a year. Approximately sixty per cent of the eligible members belong.

Peirce D. Knott, Deputy Councilor

Fifth Councilor District

The following reports from the deputy councilors of the fifth district speak for the activities of the counties during 1937.

Earl B. Bush, Councilor

Boone County. During the year 1937, Boone County Medical Society boasted, as it has for several years, one hundred per cent membership in the State Society. We are operating under a lump sum contract with the supervisors for the care of the indigents, and the plan is working very satisfactorily.

During March we participated in a postgraduate course with the Story County Medical Society. This was held at Ames, and the attendance was very good. We also held an annual summer party with the Story County Medical Society at the Ames Country Club.

The society has helped in a county tuberculin testing program, testing all students in the junior and senior high schools in the county. It has also aided in various preschool inoculation programs.

A very successful year, enjoyable and profitable to each member, passed very quickly.

B. T. Whitaker, Secretary

Calhoun County. The Calhoun County Medical Society gained one new member during the year, Dr. Alton T. Lindblom, who is located at Lake City. There were no deaths. We held meetings regularly except during May and June, when the state and district meetings were held. Attendance at the meetings is fair, and the interest is very good. Two of the members attended the postgraduate course at Fort Dodge.

Our contract for care of the indigent is working very satisfactorily.

The society carried out a countywide immunization program against diphtheria and smallpox. We also sponsored and hired a county public health nurse, and organized a Woman's Auxiliary, in which much interest is being shown. We also sponsored a project in which we gave freely of our services to collect Wassermann blood tests during the month of December. This project received much publicity,

and we believe did some good from an educational standpoint.

A general feeling of good will and cooperation is evident in our county society. We plan to conduct a postgraduate course in 1938.

P. W. Van Metre, Deputy Councilor

Dallas-Guthrie Societies. Regular meetings of the Dallas-Guthrie Medical Society have been held quarterly, at which the average attendance was twenty-eight. Our membership totals twenty-eight, of whom ten are life members. We have two new members.

We are operating under a medical plan of the Iowa Emergency Relief Administration for care of the indigent. We have no interprofessional organization, but have a very active Woman's Auxiliary which holds meetings quarterly at the same time and place as the Dallas-Guthrie Medical Society meetings.

E. J. Butterfield, Deputy Councilor (Dallas)
S. J. Brown, Deputy Councilor (Guthrie)

Greene County. The Greene County Medical Society had fifteen active members and three life members during 1937, out of a total of twenty-one physicians in the county. The meetings held during the year were devoted to business. No postgraduate work was undertaken by the physicians.

The society conducted immunization programs against smallpox in Grand Junction, Jefferson, Paton and Scranton. Due to the county school nurse, an epidemic of smallpox was averted by this measure. The individual physicians conducted Summer Round-Up examinations of preschool children, and also made the 4-H Club examinations.

The care of the indigent was given by the board of supervisors to a physician from outside of Greene County. The county society bid for the work, but failed to receive it.

We have no interprofessional organization, nor Woman's Auxiliary.

Ben C. Hamilton, Jr., Deputy Councilor

Hamilton County. Membership in the Hamilton County Medical Society decreased by one during 1937, due to the death of Dr. C. J. Christensen of Jewell. One new doctor located in the county but has not yet joined the society. One physician moved from the county during the year.

The care of the indigent is administered by the physicians of the county medical society under a contract with the board of supervisors. This contract is satisfactory to both sides. The physicians receive \$400 a month for ordinary cases; rehabilitation surgery is paid for outside of the contract; drugs and appliances are furnished by the county.

The society as a group did no postgraduate work during the year. It conducted a tuberculosis survey and assisted at the tuberculosis clinic at the county hospital.

We have no interprofessional organization, nor Woman's Auxiliary.

M. B. Galloway, Deputy Councilor

Polk County. Ten new physicians located in Polk County during 1937. Seven of these have already affiliated with the society. In addition two new

members have been obtained who have practiced in the county for two or more years. Three members were lost by death, none of whom were in active practice. Four members transferred to other societies and three members were dropped for nonpayment of dues. The total membership, inclusive of all classifications, was two hundred and fifty-nine on December 31, 1937.

Twenty-six meetings of the Council were held during the year. The society held nine regular and three special scientific meetings in addition to the annual meeting and one public meeting. The Program Committee adhered to the policy of using its own members in regular meetings. The society was addressed by fifteen local members and ten guest speakers. One interprofessional meeting was held at which President Friley, of Iowa State College, spoke. The average attendance at regular meetings was only approximately thirty per cent of the membership.

The Medicodental Bureau, an activity of the society which arranges for hospital, medical and dental care for people of low income, is in its third year. The service is becoming more stabilized and is gaining in number of patients served and fees collected. Recently the society has taken over the control of a collection service; named it the Medical Business Bureau; and will provide a supervised credit information and collection service. This is managed in conjunction with the Medicodental Bureau and it is hoped that it will have a definite bearing against state medicine.

During the year twelve members of the society have given as many radio talks; thirty-six have addressed eighty lay audiences and thirteen have appeared on the programs of other county medical societies. Five members spoke on the "refresher" courses arranged by the State Society. Records show that forty-six members have participated in this work. Most of these talks have been scheduled by the Speakers Bureau of the State Society.

Beginning July 1, 1938, a rotating interne service will be inaugurated by the four Des Moines hospitals. This service will be extended into a two-year internship July 1, 1939. It will include exchange between the individual private institution, which the interne selects, and the county hospital and will provide a curriculum of postgraduate lectures.

The third annual Diphtheria Immunization Campaign was held during the month of November. The second Summer Round-Up, in which the society has participated to the extent of giving the preschool examinations in the offices, was satisfactorily conducted during the month of May. The permissive county health unit law was made effective after a careful survey and upon the recommendation of a committee of the society. Three members of the society have been appointed to the eleven-man Polk County Board of Health. Plans have been approved by the council for establishment of a tuberculosis clinic to be manned by members of the society engaged in that field of practice and financed by the sale of Christmas seals.

A controversy between Broadlawns Board of Hospital Trustees, the former medical superintendent, and the Polk County Medical Society was terminated early in the year. Much more satisfactory working relations have been established and at the present time there is harmony in the conduct of the hospital service. During the year members of the society gave 4,780 hours of time at the hospital.

The Legislative Committee obtained a change in the law which permits the board of supervisors, in this county, to contract for medical care of the indigent, thus enabling them to enter into a contract with the society for such services. Some progress has been made toward obtaining a contract for medical care of the indigent in their homes.

The Commitment Committee has continued to give valuable service to the University Hospital in the selection of patients, to the county in maintaining the quota and to the profession in controlling the commitment of patients.

The executive office of the society continues to serve in the multitudinous capacity incumbent upon an office of that kind.

James A. Downing, Deputy Councilor

Story County. The Story and Boone County Medical Societies presented a postgraduate course in general therapeutics in the spring of 1937. This course had sixty-seven registered, and was very well received. In the fall, the two societies presented a "refresher" course in obstetrics and pediatrics, at which the average attendance was about forty.

The county society has a contract with the board of supervisors for the care of the indigent. This gives us the benefits of a perfect membership, strong postgraduate courses and general social activities.

A county unit of the Women's Field Army was organized, and the campaign for funds was fairly successful.

Members of the society gave several talks to lay groups on social diseases, and furthered the work of the National Social Hygiene Association insofar as possible. The possibility of having a full time county nurse was discussed, but definite action has not been taken as yet. Our joint meetings with the Boone County Medical Society have been very beneficial to both groups, as is evident from the large attendance.

Bush Houston, Deputy Councilor

Webster County. The year of 1937 was marked by the loss of one of our younger and popular members, Dr. Joseph Galvin. One member of the society left to continue postgraduate studies, and three new physicians located in the county during the year.

We have a new contract for care of the indigent which is not as satisfactory as our former one based on a fee schedule. However, it is operating under the control of a committee elected for one year by the county medical society.

We presented a postgraduate course in general therapeutics during the spring of 1937. This was very well attended by our own members and many physicians from outside the county. Several of the members gave talks to lay audiences, and the society

as a whole was active in the tuberculosis program held annually each spring. Several society meetings in which men of national reputation appeared were held.

Our Woman's Auxiliary was active during the year. As one project, it supplied the schools with copies of *Hygieia*. Our interprofessional relations were pleasant, but there was not much activity during the year.

L. L. Leighton, Deputy Councilor

Sixth Councilor District

Good county medical meetings and programs have been reported from the various counties of the sixth district during the past year.

A district "Summer Round-Up" of physicians and their families was held in Eldora on one of the hottest days of the summer and a most profitable conference was led by President Myers. These conferences should be held regularly.

During the past year the Speakers Bureau presented one of its best courses according to comments of those who should know. In the sixth district, Waterloo had a most excellent, well attended course.

The Women's Field Army for the control of cancer is being thoroughly organized over the district through the able efforts of State Commander Mrs. M. C. Hennessy and Vice Commander Mrs. H. C. Keiber of Waterloo and their assistants. Meetings of interest were arranged at Waterloo and Marshalltown. Other prevailing health activities in the district are moving along in an orderly manner.

The nine counties in the district are doing a good job of handling their own medical affairs and are co-operating with the various agencies in helping to deliver a better health service to the public. These counties are looking to the state society and its executive council and committees for suggestions in handling the many problems that come up between sessions of the House of Delegates.

I wish to thank the deputies for their prompt assistance. A brief report of individual counties follows.

C. W. Ellyson, Councilor

Benton County. Membership is one above 1936 or eighteen in all. One physician, Dr. Geo. A. Wagner of Van Horne, died during the year. Four physicians located in Benton County and affiliated with the county society: Dr. D. A. Dutton of Van Horne, Dr. Wm. D. Yavorsky of Belle Plaine, Dr. J. A. Muggly of Norway, and Dr. Earl D. Lovett who transferred from Cherokee County to Vinton. There was one removal from the county, Dr. K. W. Woodhouse to Guthrie Clinic, Sayre, Pennsylvania.

Relief: Same plan for indigent care as last year. The physicians at Belle Plaine get \$175.00 per month for care of the indigent at Belle Plaine, Luzerne and Iowa townships; and the Vinton physicians get \$175.00 per month for care in Taylor township, county home and the jail. The rest of the county is served by a reduced fee from the board. The plan is working

satisfactorily. Several towns have had immunization programs. There is no medical auxiliary.

G. R. Woodhouse, Secretary

Black Hawk County. Membership: We now have sixty members with a net loss of two during the year. Three were taken by death, namely: Dr. J. G. McAlvin, Dr. Ross Cutler, and Dr. F. W. Porterfield; and we took in one new member.

Medical relief set-up: Our county society has a contract with the board of supervisors to care for the indigent sick for seventy-five per cent of the minimum fee recommended by the Iowa State Medical Society. The plan has been working very satisfactorily for three years; however, this is the first year that we have been on the seventy-five per cent basis.

Postgraduate work: We had a most excellent postgraduate course last fall. There were sixty-six matriculates. These, of course, were not all from our own membership.

Public health programs: While there is nothing active now, all of these programs must be sponsored by our county society.

Interprofessional organization: This project has not been highly cultivated in this community, but there is a skeleton organization. So far, our society has not taken part in it.

Woman's Auxiliary: There is in existence a Woman's Auxiliary which seems to be almost limited to the Waterloo doctors' wives and is purely social. As I understand it, it is not affiliated with any state organization.

Our new officers were just recently installed. We seem to have a most excellent president, secretary and board of trustees and personally I look forward to a very good year.

A. J. Joynt, Deputy Councilor

Grundy County. Membership: Unofficially reported same as last year, with total of ten members and one eligible non-member.

Relief work: On county order basis.

Members cooperating well, but relying on surrounding larger societies for postgraduate and other professional association.

R. T. Spain, Deputy Councilor

Hardin County. Membership: Total same as last year, twenty-seven; two losses: Dr. E. C. Kauffman, Union, deceased; and Dr. J. R. Faust, moved to Clarion. Two new members: Dr. Geo. A. Blaha, Whitten; and Dr. Kenneth H. Weaver, Union.

Relief work: Lump sum contract with the board of supervisors—the oldest contract of this type in the state. Working satisfactorily.

Postgraduate work: None except that of members attending courses outside of the county.

Public health work: Had immunization programs at Iowa Falls, Hubbard and Eldora.

Have a Child's Health Clinic and a County Tuberculosis Society.

W. E. Marsh, Secretary

Iowa County. Membership: Our total membership is eleven. We have no new members and lost two during the year. Dr. Augustine of Ladora died November 3, 1937, and Dr. Watts moved to Cheyenne, Wyoming.

Relief work: We have an agreement with the board of supervisors which pays about fifty per cent of the regular fee bill.

The Amana colonies conducted a successful tuberculosis program.

One annual meeting is held for election of officers, and we attend programs of surrounding larger societies to which some of our members belong.

Irvin J. Sinn, Deputy Councilor

Jasper County. Regular meetings have been held monthly. They were devoted entirely to scientific subjects, and were well attended.

The membership of the society has remained the same as in the previous year, twenty-eight members.

Child health clinics were held for preschool children, and immunization programs were carried out for smallpox and diphtheria.

The society's previous medical contract with the county board of supervisors was renewed with minor changes. Under this contract, the fees charged are fifty per cent of the state society fee bill. A committee of three physicians assists the board of supervisors in auditing medical bills, and acts as a conciliatory and advisory board. As a whole, this plan has been very satisfactory to the board, the physicians, and the patients.

Harry P Engle, Deputy Councilor

Marshall County. Membership: Our total membership was forty-two. During the past year Marshall county has added two new members, Dr. R. L. O'Toole and Dr. C. M. Smith. Three members retired from active practice. Dr. C. E. Irwin moved to Woodward, Iowa. We have one eligible non-member. There were no deaths in the profession.

Relief work: We have a contract with the board of supervisors. It consists of a flat sum of \$9,000.00 annually, payable in monthly instalments. Indigents are given medical slips to the doctor of their choice. Physicians are paid in accordance with work done on a quarterly basis. The contract works fairly satisfactorily, but the sum is too low for the amount of work done. The society holds a reserve of \$2,000.00 from the above contract to cover national, state and county dues, and pay for dinners, programs and other expenses of the society.

Postgraduate work: A few of the members attended postgraduate courses at Ames and Waterloo.

Public health work: A diphtheria immunization program was carried out for indigents by the city health officer, sponsored by the county society. The society also cooperated with an "Audiometer" test conducted among part of the school children by the University Hospital.

Six lay talks on syphilis, one talk on heart disease, and three talks on cancer, were given during the year by members of the county society, and in addition

one radio talk was given over the station at Ames, on the subject of colds.

A. D. Woods, Deputy Councilor

Poweshiek County. Meetings: Six regular and two special meetings were held during the year. Membership totaled twenty-two. We lost one member by death (Dr. C. D. Busby), and one by removal (Dr. C. V. Morrison). One new member, Dr. Harry Parsons, transferred his membership from Johnson to Poweshiek county.

Relief work: Our annual contract with the board of supervisors for the care of the indigent prevails as in previous years on a reduced fee basis. This is working satisfactorily.

Public health work: Diphtheria immunization program sponsored by the Farm Bureau, assisted by the State Department of Health, was carried on. A tuberculin testing program in the eighth and twelfth grades was carried out by the county society. College and high school freshmen were examined by the Grinnell physicians.

A few health talks were given by the members to lay groups during the year.

An interprofessional group has been organized but there is no Woman's Auxiliary.

Some members of the society attended postgraduate courses in surrounding counties.

C. E. Harris, Deputy Councilor

Tama County. We have had a very good year with a good attendance, good spirit and a considerable enthusiasm.

Membership: We have twenty-four members in the society at present.

Medical relief: Same contract is in force for 1938 as in 1937, \$4,000.00 paid in four equal quarterly instalments. Twenty-five per cent goes to the society and balance to the members, according to the amount of service rendered.

Postgraduate work: Our members have attended good courses in the surrounding counties.

Public health work: We have a county health nurse giving full time, one-half of her salary paid by the state and one-half paid by the county. She works under a county health committee headed by the deputy councilor.

Interprofessional program: An organization was suggested but did not meet with sufficient support from veterinarians and dentists.

Woman's Auxiliary, none.

A. A. Pace, Deputy Councilor

Seventh Councilor District

The appended reports of the deputy councilors of the seventh district indicate that each of the county societies has enjoyed active progress during the past year.

The care of indigents and medical indigents, while not satisfactory in some counties, seems to have improved in the district as a whole. However, annual controversies in regard to contracts for this work certainly are not conducive to harmony between the

parties concerned, and do not increase the efficiency of the work. In his report last year, the district councilor, Dr. A. W. Erskine, pointed out the need for uniformity in plans for the medical care of indigents and medical indigents. He also suggested that the House of Delegates should formulate a plan sufficiently elastic to be applied in all counties of the state. As the problem of medical care of indigents appears to be a permanent one, I believe its solution demands such a plan.

The cancer educational program was very successful in this district. It is estimated that the campaign reached between twenty and twenty-five thousand adults in the several counties. This notable success in lay education was due to the fine cooperation of the county cancer chairmen with the district and county units of the Iowa Division of the Women's Field Army and the various other women's organizations. As an index of the success of the program, 1,727 enlistments were obtained. Each represents a man or woman who recognizes the need for and value of the educational program in regard to cancer, and who is desirous of giving it financial support in order to make it effective. That the cancer educational work is bearing results is evidenced by reports from many doctors that their patients with symptoms suggestive of cancer, have sought immediate medical advice. A goal of 3,000 enlistments has been set for the 1938 campaign by Mrs. J. W. Ballard, Vice Commander of the Women's Field Army for 1938. It is believed that this is the minimum number required to make the educational program fully effective.

During the year a postgraduate course on cancer was given at Cedar Rapids under the sponsorship of the Speakers Bureau. In spite of the fact that outstanding men gave the lectures, the attendance was disappointing. In seeking reasons for this fact, it seems possible that the large number of medical meetings have surfeited our membership. Then the fact that the men must leave their practices each week for several successive weeks is a detrimental factor. Possibly if the planned postgraduate course consisted of monthly lectures, and if it replaced to a certain extent the regular county society meetings, these detrimental factors would be overcome.

In conclusion, I wish to express my appreciation of the fine cooperation of the officers of the several county societies, the deputy councilors and the county cancer chairmen during the year. It is this factor that makes the continued progress of the entire profession of the district possible.

F. P. McNamara, Councilor

Buchanan County. The Buchanan County Medical Society functioned as usual last year. The membership has remained the same.

Our medical relief set-up has not changed and has proved very satisfactory.

The society has carried on a county smallpox vaccination program.

There is no Woman's Auxiliary or interprofessional organization in this county.

There has been some work done on the cancer educational program. It is hoped that the program will be developed more completely in 1938.

C. W. Tidball, Deputy Councilor

Cedar County. Activities of the Cedar County Medical Society were not great in 1937. Two new physicians who moved into the county were added to the list of members. The short distance to larger centers attracts our members because of the fine programs and more interesting associations. Dr. A. W. Erskine has been eager to make our meetings helpful and brings to us the best possible talent for our entertainment.

E. J. Van Metre, Deputy Councilor

Clinton County. Our membership decreased one during the past year, because of the death of Dr. F. A. Hohenschuh of Clinton. Outside of the society there has been one new physician locate in Clinton. Dr. Porter of Grand Mound has moved from Clinton County. As far as the medical relief set-up is concerned, we are still unsettled. Last year the society took a drop of \$3,500 over the previous year and when the county was taken off state relief in November, we took a proportionate cut of \$3,280 for the balance of the year. The supervisors here had an agreement to pay us \$14,000 a year as long as they received state aid, and at the rate of \$1,060 per month when not on state aid. However, the state authorities would not sanction renewal of the contract under such terms but wanted it at the lower figure. The society refused to accept such an agreement.

The physicians outside of the city of Clinton were being paid slightly more than \$2,300 a year for their work, but our members helped them on hospital cases. Because we have no contract we can no longer aid them in this way, and so they have refused to sign a contract. They are now doing the work under the same basis as the society, namely, a full fee schedule such as pertains in the county.

We are now getting orders for relief work at the regular fees charged private patients, but the assigning of patients is handled by the relief organization. The supervisors and all were satisfied with the work and desired us to continue; the only hitch is the financial part. After a month or two of paying regular fees, other arrangements probably will be made.

We had a postgraduate course last spring of five lectures with an attendance of over forty. We are going to have another course of five lectures during March and April of this year.

Several members have spoken before the different Parent-Teacher Association organizations on matters pertaining to health. We immunized the school children against diphtheria in Clinton this fall, and during the spring the physicians, in cooperation with the Red Cross nurse, conducted an immunization program against both diphtheria and smallpox.

In January an interprofessional group was organized by Dr. Bernard of Clarion. Dr. L. K. Fenlon was elected president, Dr. R. N. Howes, D.D.S., vice

president. There is no Woman's Auxiliary in this county.

The society conducted a cancer educational program, held meetings with the Women's Field Army, and gave numerous lectures throughout the county. The medical society contributed \$1.00 per member toward the cause. It is hoped that the program this year will gain more headway.

The general affairs of the society have been conducted in a progressive manner; our meetings are very well attended and a spirit of harmony and good fellowship prevails in the county.

Ralph F. Luse, Deputy Councilor

Dubuque County. Membership: During 1937 the Dubuque County Medical Society accepted five physicians into membership; two by transfer and three by application. The society lost two physicians by transfer and two by death.

Meetings: The society held eight regular meetings, three special meetings, and one anniversary meeting. The average attendance was fifty per cent of the membership. The following guest speakers participated: Dr. W. L. Crawford, Rockford, Illinois; Dr. A. L. Lash, Chicago, Illinois; Dr. Paul O'Leary, Rochester, Minnesota; Dr. Hugh Cabot, Rochester, Minnesota; Dr. Walter N. Nadler, Chicago, Illinois.

Tuberculosis Campaign: The society participated with the Dubuque Visiting Nurses Association in the examination for tuberculosis of children in a certain number of schools. The routine Mantoux test and an x-ray for the positive reactors were carried out.

This year the program set-up will be changed somewhat and the members of the county medical society will participate in a case-finding program jointly sponsored by the Iowa Tuberculosis Association, the State Board of Health, and the Dubuque Visiting Nurses Association. Many of the members of the society have assisted this and other local public health projects by talks delivered to various organizations and over the radio.

Medical Relief: The medical relief set-up entered into with the Dubuque County Board of Supervisors was on the basis of a stipulated sum per month, all cases seeking relief to be passed upon and given an order by a representative of the director of relief in Dubuque County. At the end of the month the amount received by the individual physician was prorated as to the amount of work done and the amount of money allowed. All surgical cases and all cases for which hospitalization was necessary for any length of time were required to have consultation.

An endeavor is being made this year to change the set-up somewhat. The society is asking for an increase in the amount allowed them by the board of supervisors, and they wish to set up a central clinic where all ambulatory cases will be cared for. This contract appears to be well on the way toward confirmation.

Interprofessional Society: The Dubuque County Interprofessional Society was formed during the year. The officers are: Dr. F. P. McNamara, presi-

dent; Charles Falkenhainer, Pharm. D., vice president; J. G. Nemmers, D.D.S., treasurer; and Clara Henchen, R.N., secretary.

Woman's Auxiliary: The Dubuque County Woman's Auxiliary has been active during the year 1937, holding regular monthly meetings with very excellent programs. During the meeting of the Iowa Registered Nurses in Dubuque, the Auxiliary entertained at a tea which was attended by between 400 and 500 persons.

Cancer Program: The members of the society and the Dubuque County Cancer Chairman, Dr. Roy I. Theisen, actively cooperated with the Dubuque unit of the Women's Field Army in the cancer educational program. Over 600 Dubuque women enlisted in the unit during April, 1937, and probably one-half the adult population of Dubuque was reached by lectures, exhibits and by literature distributed by members of the Dubuque unit.

J. Carl Painter, Deputy Councilor

Delaware County. The Delaware County Medical Society held four meetings in 1937. They were combined business and scientific meetings, and were preceded by a dinner. Of the twenty-one eligible physicians in the county, fourteen are active members.

The cancer campaign organized in 1936 was carried on with considerable enthusiasm in 1937, and we felt fortunate in meeting seventy-five per cent of our quota.

An interprofessional organization was voted upon and accepted in December, 1937, and the officers were to be elected at the January meeting.

We have been operating under the same county contract with our board of supervisors for the past four years. Although not entirely satisfactory the past year, it has served fairly well. Medical aid in Delaware County averaged \$18 per indigent case for 1937, with a total expenditure of \$5,450.

J. I. Jones, Deputy Councilor

Johnson County. Membership: Since the last yearly report, we have lost the following active members: by death, one; by transfer, ten; by resignation, six.

The following junior members were lost: by removal, thirty-one; by resignation, two; by transfer to active membership, eight.

We have admitted the following new membership: by transfer, four; by application, six; by transfer from junior membership, eight; junior members admitted by application, fifty-six.

Summary of present membership: active and associate members, one hundred twenty-three; non-resident members, seven; life members, two; affiliate members, two; junior members, seventy-five; total membership, two hundred nine. Total membership at the last annual report, one hundred eighty-eight.

Meetings: Ten meetings were held during 1937, nine of which included a scientific program. Two meetings were held at the University Hospital, once as guests of the hospital. The November meeting

was held at Oakdale as guests of the State Sanatorium. Dr. J. A. Myers of Minneapolis was the guest speaker at that meeting. The annual picnic of the society was held at the home of Dr. Geo. C. Albright.

Attendance: The average attendance for the year was 110 per meeting. The largest attendance was 147 at Oakdale, and the second largest was 146 at the University Hospital. The smallest attendance was 77 at the June meeting.

Medical Relief: A contract between the physicians in private practice in the county and the board of supervisors provides for the payment to the doctors of a stated sum, based upon the number of families on relief. This number is revised each month. Out of this lump sum, administered by a committee and a director, payments are made to each doctor on the basis of the work he does. On the whole the plan is working very satisfactorily.

Interprofessional Organization: The framework of this organization has been developed according to the plans formulated at the request of the State Interprofessional Organization.

Cancer Program: Under the chairmanship of Dr. John H. Randall, the medical member, and Mrs. C. E. Van Epps, captain of the Johnson County Unit of the Women's Field Army, an active cancer educational program was conducted in 1937. It is believed that a large proportion of the adult population of the county was reached by lectures given by various members of the society.

Geo. C. Albright, Deputy Councillor

Jones County. The membership of the Jones County Medical Society remains the same. There have been no deaths and no new doctors have located in our county during the past year.

We care for the indigent through a combination of the Iowa Emergency Relief Administration plan and a local plan. Three members of the county society audit the bills presented by the doctors monthly, with an understanding that the amounts approved by this committee will receive no further reduction.

A diphtheria immunization program was carried out during the year. In cooperation with local clubs, a clinic was held after which twenty patients were selected for free tonsillectomies.

There is no interprofessional organization or Woman's Auxiliary in Jones County.

T. M. Redmond, Deputy Councillor

Linn County. The summary of our present membership is as follows: One hundred active members, eighteen non-resident members, three life members, one associate member, and twenty-one honorary members. We have lost four active members by death, and three by removal. There were five new members added. There are seven new physicians in the county.

The scientific programs during the past year were very successful and well attended. At one of the meetings C. H. Hermann, M.D., Middle Amana, Iowa, read a very interesting translation from an old German book on diagnosis by examination of the

urine, published in 1490. This ancient book has been in the possession of Dr. Hermann's family for many years.

During October and November, 1937, a postgraduate course on various forms and phases of cancer, consisting of eight lectures at weekly intervals, was given.

The medical relief program is the same as described in the report a year ago. It has been more satisfactory from all standpoints than any plan previously followed. The County Venereal Disease Clinic has been incorporated into the medical relief program, and has been extended to include an efficient follow-up system and improved treatment records.

The campaign of the Women's Field Army was exceptionally successful last year in this county.

A great many talks to lay groups, especially women's organizations, are being given in connection with the campaign of the Women's Field Army of the American Society for the Control of Cancer.

B. F. Wolverton, Deputy Councillor

Eighth Councillor District

Medical matters have been proceeding at the usual rate in this district during the past year. Every society has continued its activity in holding meetings and economic discussions.

Louisa County has ninety per cent membership. The Councillor has visited the societies as often as possible and is convinced that the members in this district are alive to the problems confronting the profession at this time, and sees prospects of improvement during 1938 for all of the societies.

C. A. Boice, Councillor

Des Moines County. The Des Moines County Medical Society held nine regular meetings and three special meetings during the year 1937. Scientific papers were presented by visiting physicians at two of the regular meetings, Dr. J. H. Randall, University Hospitals, Iowa City, Iowa, and Dr. Paul O'Leary of the Mayo Clinic. The other regular meetings were devoted to business matters, and papers were presented by the local men of the society. One picnic meeting was held in May, at Crystal Lake Club, Illinois.

During the year there were thirty-four members; of this number five were life members in the society. During the year 1937 the society lost two of its life members by death, Dr. E. I. Woodbury and Dr. A. J. Thorner.

G. D. Jenkins, Deputy Councillor

Henry County. There were two removals from Henry County during 1937. Dr. A. L. Day, formerly of Winfield, moved to the state of Oregon, and Dr. G. M. Gibbs, also formerly of Winfield, took a position in a hospital in Washington, D. C. Dr. J. H. Trumbo from Wisconsin has located in Winfield and is a new member of the society. There have been no deaths in our membership during the past year.

Our contract with the county board for the care of the indigents is working out very satisfactorily.

During the latter part of December we started our tuberculosis campaign under the guidance of the State Board of Health and under Dr. McCarthy. This is working out very satisfactorily. We held nine regular meetings during the year. Our programs were furnished in part by our own members and the remainder by speakers from outside the county.

S. W. Huston, Deputy Councilor

Jefferson County. We have had no increase in membership this past year, nor have we lost any members by death or removal. Dr. C. S. Bishop, who was located at Glasgow but was not a member of our society, died last fall. Our meetings are held about every two months. There have been some excellent programs, and they have been very well attended. Our society looks after the indigent of the county under the same plan that we have had for a number of years. We feel that it is an unusually good one.

We hold staff meetings the first Monday of each month at the Jefferson County Hospital. Nearly all the county members attend. At these meetings the interesting cases are discussed, the hospital report for the month is read, and the report is made of the indigent for the month by those in attendance.

Ira Nelson Crow, Deputy Councilor

Upper Lee County. Number of physicians, sixteen; number of members of county society, sixteen; number of non-members, one (colored); number of osteopaths, four; number of chiropractors, four. No deaths, no new members, no removals.

Medical Relief: State plan operated by local medical society, two members serving each month, other members resigning. Plan is working very satisfactorily.

Diphtheria immunization carried out by local physicians cooperating with child health programs of schools.

R. L. Feightner, Deputy Councilor

Louisa County. Membership: There were no new physicians located in the county during the year, and no deaths or removals. Only four members were paid up for 1937, but before the year passed, all but one were paid up for 1938.

Medical Relief: The plan followed during the year has been that of the board of supervisors. They pay about fifty per cent of regular rates.

Postgraduate Work: Two members attended the series of "Refresher Courses" held at Keokuk last spring. A member was sent as a delegate to the "Fracture Clinic" in Des Moines and is to give a report of that meeting in the near future.

Public Health Programs: The county society, in conjunction with the Christmas Seal committee, arranged to enter into the program of having all suspects given x-ray examination of the chest. The actual work has not yet been started. One splendid talk on infantile paralysis was given before a public meeting arranged by the Community Club, and sponsored by the county medical society. The meeting

was well attended and was appreciated by the lay audience. No immunization programs have been held. Such service was offered the schools, but not accepted. No child clinics were held.

The Woman's Auxiliary has been active and has held a meeting at the time of each meeting of the county society. One meeting was missed on account of the icy roads.

J. H. Chittum, Deputy Councilor

Muscatine County. We have twenty-two members paying state dues, and six life members. One member, Dr. L. A. Royal of West Liberty, withdrew to join the Johnson County Medical Society.

We had two new physicians, Dr. E. O. Muhs and Dr. E. H. Carlson, locate in Muscatine during 1937. They presented their applications for membership at the first meeting in 1938. No members died.

We have no contract with the supervisors for care of the indigent. The arrangement with the state is not very satisfactory, but we are still "playing along" with it as best we can, hoping for better conditions with return to normalcy.

T. F. Beveridge, Deputy Councilor

Scott County. The Scott County Medical Society admitted four new members during 1937, three of them by vote and one by transfer. There were two deaths during the year. We have no life members.

There were ten monthly meetings of the society, preceded by dinners. The spring meetings were held at the Blackhawk Hotel, and the fall meetings at the Lend-A-Hand Club. Attendance averaged fifty physicians. On May 4 a dinner was given honoring Dr. and Mrs. Frederick Lambach in view of his fifty years of practice of medicine, after which Dr. Bert I. Beverly of Chicago talked on "Behavior Problems in Children." This program was open to the public.

Dues for the society are \$17 per year, \$7 being paid by each member, and the \$10 state dues and balance of \$10 of the county dues being paid by the incorporated society.

A. P. Donohoe, Deputy Councilor

Van Buren County. Our membership for 1938 remains as for 1937, with no deaths, removals or newcomers.

We have had but four meetings other than business ones. In September, Drs. Platter and Parrish of Memphis put on one program, at which time Dr. C. K. McCarthy of Des Moines presented the plan for a tuberculosis clinic. This was held in December. About sixty-five patients were x-rayed by Dr. C. A. Boice of Washington.

Relief Work: We are still on the IERA plan, which works quite well. Due to the large number of cases it is not possible to pay in full. However, all are working harmoniously to keep work down to the minimum.

Several attended the "Refresher" course given in Lee County and were well pleased. It is hoped we can have more of such meetings.

C. R. Russell, Deputy Councilor

Washington County. We have the same satisfactory medical and surgical contract with the county for care of indigent patients that we have had the last five years.

We had thirteen county meetings, five special meetings on prenatal and postnatal care.

Dr. Sorensen withdrew his membership when he moved to Cherokee.

Dr. Walsh was taken into membership when he took over the office of county health physician.

The county society has been very active through the County Health Unit in the prevention of disease, in the inoculation of school children against diphtheria and smallpox, in the care of expectant mothers, and has held two tuberculosis clinics at which 190 chest x-ray pictures were taken. Most of the doctors visited these clinics and Dr. McCarthy examined a number of patients in the presence of the family physician. These clinics are decidedly worthwhile and will result in much good.

E. E. Stutsman, Deputy Councilor

Ninth Councilor District

The reports of the deputy councilors of the ninth councilor district are herewith submitted. These reports portray the activities of organized medicine in this district during the past year. By the continued activity and cooperation of these deputy councilors, the work of the councilor has been lightened and made more effective.

H. A. Spilman, Councilor

Appanoose County. The Appanoose County Medical Society held five meetings during the year, with an average attendance of eight members. One new physician located in the county, and we lost one member by death.

The indigent and low income groups were cared for by the county medical society under the IERA plan. The bills were cut as high as forty-three per cent, and that has made the plan unsatisfactory.

We conducted a "refresher" course in the spring of 1937, which was very well attended both by local men and out-of-the-county physicians. We felt this course was very helpful.

The Woman's Auxiliary is not functioning.

C. S. Hickman, Deputy Councilor

Davis County. The membership in the Davis County Medical Society was decreased by one death in 1937. Three scientific meetings were held during the year. Several members of the society attended the postgraduate course in Centerville.

The medical society inoculated ninety-five children between six and eighteen months of age for diphtheria, and also fifty-four pupils of one of the consolidated schools.

We are working under the IERA plan for care of the indigent, and find this satisfactory. The society feels it had a good year, with good programs, and an interested membership.

H. C. Young, Deputy Councilor

Keokuk County. There was no change in the membership of the Keokuk County Medical Society during 1937. We continued our plan of contracts for medical care of the indigent by townships, with local physicians doing the work. Several members of the society attended postgraduate courses outside of the county.

A special meeting was called to consider the scarlet fever epidemic, at which time the importance of diagnosing and quarantining mild and atypical cases, and of uniform quarantine laws was discussed. Another meeting is to be called soon to consider a different method of caring for the indigent, as the present plan is not satisfactory to the patients. Our regular meetings are devoted to informal discussions of problems pertaining to the practice of medicine, public health, public relations, and so forth.

C. L. Heald, Deputy Councilor

Lucas County. There has been no change in the membership in the Lucas County Medical Society. Only one physician in the county does not belong to the society. We are caring for the indigent under the IERA plan.

Monthly meetings are held. Several of our members attended postgraduate courses during the year. The society sponsored an immunization campaign for the school children in the county.

We have no Woman's Auxiliary, and no interprofessional organization, although we have entertained the dentists of the county and in return met with them during the year.

R. C. Gutch, Deputy Councilor

Mahaska County. The Mahaska County Medical Society has been functioning very smoothly during 1937. All members unite to carry on any work which seems worthwhile. We sponsored a county health nurse, a tuberculosis program, an immunization program, and an interprofessional organization during the year. We gained one new member, and lost one through his retirement from active practice.

L. F. Catterson, Deputy Councilor

Marion County. The membership roster of the Marion County Medical Society has remained unchanged during the past year. We have but one delinquent among those eligible for membership. There have been no deaths nor removals.

Our society still adheres to the original Emergency Relief Plan. It is not entirely satisfactory but to date no suitable substitute has been devised. This, of course, applies to the indigent class. As for the so-called "Low Income Group," no program has been considered.

Several of our members have attended postgraduate courses in other counties. We have had no course locally.

A successful early diagnosis tuberculosis campaign was sponsored, as well as several diphtheria and smallpox vaccination clinics throughout the county. The Farm Bureau received our cooperation in conducting the annual 4-H Club examinations for both girls and boys. We feel that this is a very worth-

while effort. Several of our members have appeared as guest speakers on lay programs.

The Marion County Woman's Auxiliary has not been active as a group, but the individual members have helped supervise local lay health programs and endeavors. One of our auxiliary members, serving on the State Press and Publicity Committee, is ably supervising the annual Health Essay Contest locally.

During the current year the Marion County Medical Society has held five meetings, the highlight being the December meeting, held in conjunction with the veterinarians. All meetings have had good attendance.

This county has no organized interprofessional organization. However, we are in a position to receive cooperation from all groups whenever occasion demands, especially the veterinary group.

C. S. Cornell, Deputy Councilor

Monroe County. The membership in the Monroe County Medical Society remains the same as in 1936, two paid members and three life members. We are caring for the indigent under the IERA plan, which is not satisfactory. The county society did not sponsor any special immunization programs, but the individual physicians did some immunization work. We have no interprofessional organization, but we have an active Woman's Auxiliary. Four regular meetings were held during the year.

T. A. Moran, Deputy Councilor

Wapello County. Membership: There was an increase of two members in 1937, Dr. Gilbert Struble and Dr. Gage Moore. There were no removals and no deaths of physicians.

Medical relief setup: The plan in force for the care of the indigent in Wapello county is the same as the one which has been in force for the last two years. The Board of Supervisors engages the full time services of a physician, and special work, such as surgery, fractures, obstetrics and other specialties, is taken care of by other members of the society in rotation or at the choice of the patient.

Postgraduate work: One of our members took special work over a period of six months in various places in Europe, spending most of his time in Vienna.

Public health programs: No activities.

Interprofessional organization: None.

Woman's Auxiliary: This organization holds meetings at regular intervals but it has engaged in no special activities.

Edw. B. Hoeven, Secretary

Wayne County. We lost one member by death during 1937, but otherwise have had no change in our membership. We are working under the IERA plan for care of the indigent, and find it fairly satisfactory. Seven of our members attended postgraduate courses. We conducted two health clinics during the year, helped with a tuberculin testing program, a heart and chest clinic, and with immunization of school children. We are also cooperating with the work of the Chariton River Project.

S. W. Corbin, Deputy Councilor

Tenth Councilor District

Submitted herewith are the reports of my deputy councilors for the past year. This has been a more or less inactive year in my district, although we conducted an orthopedic clinic in the spring, and two postgraduate courses. The cancer campaign was carried on with great success in some counties, but in others there was very little activity.

We hope to have a more active season during 1938.

James G. Macrae, Councilor

Adair County. During the past year the Adair County Medical Society has held four meetings, one a scientific program sponsored within the society, one a social program, and two business programs.

The medical relief set-up is the same as was in force during the previous year and is functioning satisfactorily. It is an individualized plan which has been altered from time to time to meet varying conditions but to date we have found no other plan giving equal satisfaction to both doctors and patients. It is not perfect but it is working.

No Woman's Auxiliary has been established to date, but the matter has been discussed and the time is excellent for extending this feature in the county.

During the year an interprofessional organization was perfected but is not active as yet.

Our membership has been one hundred per cent up to this year, but we are out of this class at present because of the loss of one membership.

Most noticeable in our activities is the revival of scientific programs within the organization itself, sponsored by rotation every three months.

A. S. Bowers, Deputy Councilor

Adams County. There has been no change in the membership of the Adams County Medical Society which has practically one hundred per cent of all eligible members enrolled.

Medical relief has been handled by an agreement between the county society and the board of supervisors and has been functioning to the satisfaction of all persons concerned.

As regards postgraduate work, there has been no local course, but some of the members have attended courses given in Montgomery County.

The public health work sponsored by the society has been limited to tuberculin tests in the public schools of Corning.

There have been no meetings of the interprofessional group or the Woman's Auxiliary.

W. F. Amdor, Deputy Councilor

Clarke County. This society has functioned without any unusual happenings during the past year. On the whole we have been rather inactive. We have had no scientific meetings and only occasional business meetings. There has been added to our membership one new physician and there has been one physician who has moved elsewhere, which leaves us with a one hundred per cent membership of eight physicians. Some of our members have pursued postgraduate work during the past year.

The medical relief set-up is the same as it was last

year, namely, that sponsored by the state medical relief agency in Des Moines. During the past year this plan has functioned smoothly except that not enough money was available to compensate physicians adequately for their work.

This society has cooperated in a diphtheria immunization campaign and is going to cooperate with the State Department of Health this year in an extensive whooping cough immunizing experiment. Some of our members have made several talks to medical societies in response to requests from the Speakers Bureau.

H. E. Stroy, Deputy Councilor

Decatur County. The membership has not changed except for the transfer of Dr. J. E. McFarland to Iowa City, Iowa, and the death of Dr. J. S. Coontz, both of Leon, Iowa.

The medical relief set-up consists of a fee schedule whereby members of the Decatur County Medical Society agree to take care of indigent patients. The society has a Medical Advisory Committee which works in collaboration with the relief officials. To date the plan has been very satisfactory, and both parties of the agreement have been very well pleased with the plan.

Postgraduate Work. Several members attended various postgraduate courses.

Public Health Programs. Smallpox immunization program sponsored at Lamoni, Iowa. The society is working in cooperation with the Chariton River Valley Health project.

This society is planning to conduct some sort of a postgraduate course in the spring.

E. E. Gamet, Deputy Councilor

Madison County. We gained one member but lost one by removal, which leaves our membership the same as the previous year. Our membership is one hundred per cent of the eligible physicians in the county. We have regular meetings each month at which one or more scientific papers are read and discussed. We are using the original medical relief set-up for the care of the indigent and low income groups because we have been unable to establish a more satisfactory plan. The usual public health programs with immunization and health talks by different members of our society for lay groups have been carried out.

We are typing pneumonias in our county, from which procedure the public has doubtless benefited. A Woman's Auxiliary was organized in our county in November, 1937, with a one hundred per cent membership.

C. B. Hickenlooper, Deputy Councilor

Ringgold County. The Ringgold County Medical Society has functioned very satisfactorily over the past year. Regular monthly meetings have been held, some business and some scientific in nature. We have used local talent exclusively.

A tuberculin testing program was conducted in the county seat school.

Our one hundred per cent membership which we have maintained in the past seems to be threatened, due to a disruption arising from the federal relief system of providing care for the indigents. The lump sum contract which we previously held promoted harmony. We are now off of federal relief, but have not been able to resume our contract with the supervisors; and are still on a set-up similar in its workings to the federal relief system.

We have two life members, and there have been no deaths or removals.

E. J. Watson, Deputy Councilor

Taylor County. There have been no new members in Taylor County during 1937, and we have lost one member through death. We worked under the IERA plan in caring for the indigent until within the last two or three months. Since discontinuance of the state plan, we have continued with the same medical committee and a fee schedule. The county board of supervisors allows all bills as passed upon by the medical committee.

We did not conduct any public health program, and do not have an interprofessional association, nor a Woman's Auxiliary.

G. W. Rimel, Deputy Councilor

Union County. There have been two new members added to our society during the past year: Dr. M. R. Paragas and Dr. John Likens. Two of our members have moved, Dr. D. L. Raffington to Compton, California, and Dr. H. A. Childs, retired. We lost one member by death, Dr. J. W. Fry.

Our county is working under the Iowa Emergency Relief set-up, which we consider inadequate.

Several of our members attended the postgraduate course in Obstetrics and Pediatrics at Osceola, Iowa, in March, 1937.

This society has cooperated with the public health program, and in June, 1937, there was held a county-wide smallpox and diphtheria immunization program in public schools. Also in June, 1937, we held a mobile crippled children's orthopedic clinic at the Greater Community Hospital in Creston, in cooperation with the county medical societies of Union, Adams, Taylor, Adair and Ringgold. In September, 1937, we conducted a county-wide Schick test in the public schools. Speakers were furnished to many lay audiences on cancer and other medical subjects. Our interprofessional organization is inactive. We have no Woman's Auxiliary.

H. G. Beatty, Deputy Councilor

Warren County: My report of the doings of the Warren County Medical Society will be very brief this year as we have done little except keep up the organization.

Membership: Lowell C. Neveln, Liberty Center, new member for 1938.

Deaths: John H. Moore, Liberty Center, Iowa, and Chas. A. Willett, Norwalk, Iowa.

Medical Relief Set-up: We are still working under the IERA plan with generally satisfactory results, and very few cuts.

Postgraduate Work: Three members attended one or more lectures in courses given by the Speakers Bureau.

Public Health Programs: Smallpox immunization in one town; diphtheria immunization program in three towns. These were done by individual physicians in the towns with the approval of the county society. One radio talk was given by a member as part of the series presented by the Speakers Bureau through WOI and WSUI.

We have no interprofessional organization. We have discussed but never acted upon forming such an organization. There were no other activities.

Ernest E. Shaw, Deputy Councilor

Eleventh Councilor District

I hereby submit the reports of the deputy councilors of the counties comprising the Eleventh Councilor District. Throughout the district, interest in society activities was at a new high level for the year. Great interest and concern is prevalent throughout the district about the socialization of medicine and was particularly evident following Senator J. Ham Lewis' address at the meeting of the American Medical Association. There is still general dissatisfaction on the question of medical relief, a problem that seems to be permanent, and coupled with this dissatisfaction is the belief that the State Society should be more energetic in its action to right the grievances.

M. C. Hennessy, Councilor

Audubon County. The Audubon County Medical Society meets four times a year jointly with Cass County, and has four local meetings within the county. The meetings held with Cass County are entirely scientific, and our local meetings are combined scientific and business. We have one hundred per cent membership in our county society and the State Society.

At the present time we are not working under the IERA plan for care of the indigent. The auditing committee of the county medical society audits the bills submitted by the physicians each month, and turns them over to the board of supervisors for payment. The plan is not altogether satisfactory, but possibly is as good as anything else.

L. E. Jensen, Deputy Councilor

Cass County. The Cass County Medical Society enjoyed a successful and profitable year. With the exception of one physician, all the eligible physicians in the county were members of the organization.

We lost two members by transfer to other societies; Dr. C. G. Clark moved from Atlantic to Shenandoah, where he became a member of the Page County Society, and Dr. L. M. Greek moved from Adair to Des Moines where he joined the Polk County Society.

Death called one of our members, Dr. Harry H. Penquite, of Massena, on November 15, 1937.

Throughout the year medical relief cases were cared for through the Iowa Emergency Relief Administration plan. The plan was not entirely satisfactory but was carried on through the year because

no other could be arranged satisfactory to both the doctors and board of supervisors.

No organized public health programs were conducted through the county medical society.

The Woman's Auxiliary was active during the year. It met at the same time as the medical society, and convened in separate session for its programs.

R. L. Barnett, Deputy Councilor

Fremont County. There are twelve members of the Fremont County Medical Society, all of whom are actively engaged in the duties of the organization. We have one non-member in the county. There were two losses by death during 1937, and one new physician located in the county. Eighty per cent of our members belong to the Southwest Iowa Postgraduate Society, and attend meetings of that group. In addition, the physicians attended postgraduate courses at several different centers during the year.

One of our members was a member of the House of Representatives of the last legislature.

Each community attends to the immunization and vaccination of the preschool children each August, with the result that eighty-five per cent of the county children are protected. No charge is made for services when the patient's inability to pay is established. The medical society as a whole sets aside one forenoon each year for examination of 4-H Club boys and girls. The society feels, however, that this examination does not reach the boys and girls who need it most, but is more of a contest, and for that reason is not heartily in accord with it.

We are working under the IERA plan for care of the indigent, and find it entirely satisfactory, far better than any former plan. This is due to the one hundred per cent cooperation of our physicians and the intelligence and honesty of our director of relief.

The society took an active part in the national and state drive for the control of cancer. Members made many talks to different groups in the county. We are also working actively toward highway safety, and have done some work on blood and urine testing for alcohol to detect drunken drivers. We believe this testing is a proper procedure, and should be made mandatory in all cases of arrest on this charge. The society also cooperated in the tuberculosis campaign, and helped record one hundred cases which are now ready for x-ray examinations.

Ralph Lovelady, Deputy Councilor

Harrison County. The Harrison County Medical Society has twenty members out of a possible twenty-three in the county. There were two deaths during 1937, and one new member located in the county.

The county is still operating under the IERA plan for care of the indigent. It is not generally satisfactory because of the large case load, which necessitates too heavy a cut.

We held no postgraduate courses in the county during the year. A campaign to immunize school children against diphtheria was sponsored by the society, and carried out in the schools. We held monthly meetings.

A. C. Bergstrom, Deputy Councilor

Mills County. The Mills County Medical Society gained one new member during 1937, but lost two by removal. Three meetings were held during the year, two of them scientific and one a business meeting. The indigent are cared for by a contract with the board of supervisors, which calls for approximately one-half the regular fee schedule. Although it is not entirely satisfactory, it is the best which can be arranged because the county receives no state or federal aid.

Some of the members attended postgraduate courses in other districts. We have no interprofessional organization, but the Woman's Auxiliary meets four times during the year for social and business meetings.

Dean W. Harman, Deputy Councilor

Montgomery County. The Montgomery County Medical Society held eight meetings during 1937, with excellent programs. No meetings were held during March and April, when we had a "refresher" course at Red Oak, nor during July and August. Attendance at the "refresher" course was around sixty.

We have a contract with the board of supervisors for the care of the indigent. It is based on a fee schedule, and is satisfactory to both sides. Our auditing committee is active in its work, and approves each physician's bills before submitting them to the county, and also authorizes all cases to be sent to the University Hospital.

We admitted four new members during the year, and all of the physicians in the county, with the exception of two, belong to the county and State Society.

W. S. Reiley, Deputy Councilor

Page County. During the year 1937 there were twenty-three members of the county society in good standing. Five other practitioners in the county who were eligible for membership did not belong to the society; four physicians are ineligible, and two are retired.

Medical Relief Set-up: In May, 1935, Page County physicians and the board of supervisors accepted the Iowa Emergency Relief Plan. The plan has been in operation since then except for a period of four months, September to December, 1937, inclusive, when the county was not on state funds. According to a statement from the Page County Social Service League, the board of supervisors has been pleased with the work of the medical committee and asked that it continue to function during the four months we were not on state funds. It is the opinion of the board of supervisors that it is much better for a committee of doctors to review medical problems and bills and make such adjustments as are necessary than to have this phase of the work done by the board of supervisors. The county is operating under the following plan at the present time:

1. One class of our patients is designated as our county case load and includes all unemployed persons where medical relief is extended, and those receiving \$30 per month who need extra help to supplement their private earnings.

All medical bills with reference to physician's serv-

ices and drug bills, as well as special nursing fees, are paid from the county poor fund.

2. The second type of case is the unemployed case load. It includes all persons who are unable to find employment. The doctor's fees and drug bills and special nursing fees are paid from state funds.

3. Hospital bills and ambulance fees, whether or not the cases are carried as county or unemployed, are paid from the county poor fund.

4. The other type of relief is the WPA Supplemental which is also used in this county.

5. The soldiers' relief fund is separate from the state fund or county poor fund. These cases are approved by the Soldiers' Relief Commission. Hospital and doctor bills and ambulance fees are not paid in this case from the county poor fund but by the soldiers' relief fund.

From the standpoint of the physicians of the county the plan as a whole is fairly successful at the present time. It is the opinion of practically all of the men, however, that the fees received for the work are too small. It also seems at the present time that the plan cannot be improved.

It is the opinion of the Medical Committee which has gone over the drug bills that the services rendered by the pharmacist above the cost price of the drugs have been too high in proportion to the fees received by the physicians for their services. Steps are being taken at this time to correct this matter. The profit to the druggist above the cost price on drugs heretofore has been between twenty and twenty-five per cent.

Postgraduate Work: Several members of the society took postgraduate work during the year, and many attended the "refresher" course held at Red Oak.

Public Health Program: The County Medical Society sponsored a diphtheria immunization program in the public schools system in Clarinda, Coin and Northboro. In Clarinda 1000 children were immunized, making the school immunized one hundred per cent. Coin immunized one hundred per cent of its school and preschool children, and Northboro immunized seventy-five children in 1937. In 1937 a large number of school children in Shenandoah were immunized, but as this was done by physicians in their private practice I do not have any statistics on the number. Suffice to say, however, it was entirely inadequate. Locust Grove school children, consisting of forty pupils, were immunized in December, 1937.

The cancer chairman of Page County is working with an organization among the Women's Clubs for the cancer campaign for 1938. A number of health talks on cancer were made in Shenandoah and the vicinity during 1937.

There was no interprofessional organization during the year 1937.

There is no active Woman's Auxiliary in Page County.

During the year 1937 a very active campaign was sponsored by the physicians of Shenandoah, in cooperation with the trustees of the Hand Memorial

Hospital, to build an addition to the Hand Hospital. This program was carried out to the extent that plans were drawn, specifications completed, and bids received on the proposed building, although none of the bids have been accepted to date. This program will be carried forward early this spring and it seems rather certain that a new modern addition to the hospital will be completed sometime during the year 1938. The new available space will take care of about fifteen more beds which will be private for the most part. It will also include a small isolation section.

W H. Maloy, Deputy Councilor

Pottawattamie County. Five formers of the Pottawattamie County Medical Society were reinstated during 1937, and one new member was admitted. One member was lost through death, two through removal from the county, and one was delinquent in paying his dues, with the result that we had a net gain of two members for the year, making a total of sixty members.

Since the division of the relief clients into employable and unemployable unemployed, half of our local situation has been definitely improved, because the fees for work paid for directly by Pottawattamie County are fixed, and are not subject to horizontal cuts. The relief work under the IERA plan still has certain unsatisfactory aspects, chiefly the horizontal cut and the amount of work which is being sent to Iowa City.

There has been no postgraduate course in Council Bluffs for several years, but we plan to present a course in metabolic and endocrine disturbances during the spring of 1938.

The local society supplies physicians to the Well Baby Clinic. This clinic cares for approximately twenty babies each week. The society aided in holding a public meeting on syphilis in April, which was very successful.

We have formed an interprofessional organization with the dentists, druggists, nurses and veterinarians. One meeting has been held, at which time officers were elected.

The Woman's Auxiliary is very active in our county, with a membership of forty-six out of a possible fifty-two. Nine meetings were held during the year, with outstanding guest speakers. The group was very active in aiding the Women's Field Army in its campaign for funds to control cancer, and also helped sponsor a health essay contest in the three local high schools.

Jack V. Treynor, Deputy Councilor

Shelby County. Ten members were listed for 1937, which represented one hundred per cent of the physicians in the county, except for one man who spent four months in Panama. We held three meetings. Our medical relief plan continues to be fairly satisfactory, being a county fee schedule, with indigents choosing their physicians, and the county relief office authorizing and paying for services. Members of the society aided the Women's Field Army by making talks and serving on the county committee. An in-

fant welfare clinic was held in connection with the county fair, and our members conducted the examinations at this clinic. A one day examining clinic for 4-H Club girls was carried out by the society.

A. L. Nielson, Deputy Councilor

Dr. M. C. Hennessy: I move that the report of the Council as it appears in the handbook be approved.

The motion was seconded and carried.

President Myers: Report of the Delegates to the American Medical Association.

REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

All would probably agree that the high points of interest in the 1937 meeting were the appearance of Senator J. Hamilton Lewis of Illinois before the House of Delegates and the introduction of resolutions by the New York delegation on the development of a national health program. In the opening meeting of the House of Delegates a telegram from Senator Lewis was read in which he requested an opportunity to speak to the House of Delegates on questions of grave importance. This is the second occasion on which Senator Lewis has invited himself to speak before the House of Delegates (the first was at the 1935 meeting in Atlantic City). The senator's wish was granted and in due time he came and delivered himself in characteristic fashion of the address which is now generally well known to the profession. He conveyed personal greetings from President Roosevelt. Press notices the following day denied that the President sent greetings. In his address the Senator outlined the main features of legislation subsequently introduced by him in the form of a bill in the United States Senate. He openly advocated a federal health service in which the doctor would be licensed by the federal government and required to respond and care for any "citizen" who asked for medical aid. The Senator washed out the fundamental patient-physician relationship and substituted therefor one citizen administering to another citizen for the benefit of the state. A physician refusing to render such service would be guilty of such misconduct that his crime would land him in jail. The address of the Senator was disposed of with the following resolution: "Resolved, That the illuminating address of Senator James Hamilton Lewis be referred to the Board of Trustees for consideration and for subsequent reference to the House of Delegates if, in its wisdom, consideration by the House is deemed to be necessary." The trustees gave no answer to the Senator while the House of Delegates was in session. As a matter of fact, the attitude of organized medicine in this respect was expressed by the Board of Trustees in a report which was published in the *Journal* under date of January 8, 1937, and reproduced here. This report might also be considered as an answer in advance to the resolutions of the New York State Society.

Resolutions on the Development of a National Health Program. Under instructions from the House of Delegates of the New York State Society the New York delegation requested the American Medical Association to formulate a national health program for submission to the national government. The resolution provided for extension of federal, state and local public health services, provision of "adequate" medical care for the indigent to be met from government funds; public funds for medical research, hospitals and medical schools; public funds for the support of private hospitals; selection by state and county societies of experts to carry out these provisions in their communities, and a definition of "experts" for this purpose.

The proposal was discussed at length before the reference committee which came to the conclusion that the answer to New York's resolution had already been presented in substance by the report of the Board of Trustees. This was a statement which the Board had published in the *Journal* January 8, 1937. This statement had been considered by the House and fully approved in regular session on June 8, 1937. The committee recommended that "the bureaux' councils, and committees of the association continue their studies of the need for and the methods of distributing medical care, to the end that the American Medical Association shall continue to do everything possible to promote and protect the health of the American people." It also recommended that the association "reaffirm its willingness on receipt of direct request to cooperate with any governmental or other qualified agency and to make available the information, observation and results of investigation together with any facilities of the association." The recommendations of the committee were adopted by the House with almost if not quite a unanimous vote. The statement of the Board of Trustees referred to above follows:

"Recognizing that committees of the Senate and of the House of Representatives of the United States government and a special committee appointed by the President are at this time concerning themselves with the reorganization of government activities with a view to greater efficiency and economy, and recognizing also that the President, in his opening address to Congress, indicated that he would shortly present to the Congress recommendations for such reorganization of governmental activities in the executive branches, and recognizing moreover the great desirability that all activities of the federal government having to do with the promotion of health and the prevention of disease might with advantage be consolidated in one department and under one head, the Board of Trustees of the American Medical Association would recommend that such health activities as now exist be so consolidated in a single department which would not, however, be subservient to any charitable, conservatory or other governmental interest. It has been repeatedly said that public health work is the first problem of the state. It is the opinion of the Board of Trustees that health activities of the government, except those concerned with the military establishments, should not be subservient to any other departmental interests. This reorganization and consolidation of medical departments need not, under present circumstances, involve any expansion or extension of governmental health activities

but should serve actually to consolidate and thus to eliminate such duplications as exist. It is also the view of the Board of Trustees that the supervision and direction of such medical or health department should be in the hands of a competently trained physician, experienced in executive administration.

* * * *

"In the past, the medical profession has always been willing to give its utmost for the care of those unable to pay. The available evidence indicates that today throughout the United States the indigent are being given a high quality of medical care and medical service. Nevertheless, the advances of medical science have created situations in which a group of the population neither wholly indigent nor competent financially find themselves under some circumstances unable to meet the costs of unusual medical procedures. The Board of Trustees of the American Medical Association points out the willingness of the medical profession to do its utmost today, as in the past, to provide adequate medical service for all those unable to pay either wholly or in part. Members of the medical profession, locally and in the various states, are ready and willing to consider with other agencies ways and means of meeting the problems of providing medical service and diagnostic laboratory facilities for all requiring such service and not able to meet the full cost thereof. These are problems for local and state consideration primarily rather than problems of federal responsibility. The willingness of the medical profession to adjust its services so as to provide adequate medical care for all the people does not constitute in any sense of the word an endorsement of health insurance, either voluntary or compulsory, as a means of meeting the situation."

The following are items which we believe will be of interest to the membership at large:

The secretary reported 105,640 members of the American Medical Association as of April 1, 1937. This is a new membership record.

The Organization Section of the *Journal* was reported as a substitution for the Bulletin which was formerly published. The Bulletin was published only nine times during the year and therefore did not offer a satisfactory medium for prompt reporting of many things of interest to the membership. Furthermore, the Bulletin was limited in distribution to the roster of fellows. The use of the *Journal* as at present overcomes both of these objections.

Finance. The Trustees reported that the Chicago office employees at the time of their report numbered 565.

Gross Earnings of the Association for	
year 1936	\$1,547,218.23
Net Income of the Association for the	
year 1936	113,111.84
Income from Investments (portion of	
Net Income)	80,844.60

Council on Industrial Health. The Board of Trustees reported that it had by unanimous vote adopted a resolution recommending to the House of Delegates that a Council on Industrial Health be established.

Special Journals. An increase in the total subscription to the special journals was reported but the deficit incurred from them was greater than ever before (\$33,821.30). These journals merit larger subscriptions. If the deficit continues to increase

the Trustees may find it necessary to suspend publication of those that incur the largest deficits.

The Council on Pharmacy and Chemistry reported a continued increase in the number of products submitted for consideration. The council has spent much time and effort in correcting some of the chaos that exists in the nomenclature of therapeutic agents, especially in endocrinology. Special investigations of the council were made of catgut sutures on the market and of non-specific protein therapy.

The Council on Physical Therapy reported its readiness to cooperate with state and county societies in making programs on physical therapy available to their members. The council feels that there is a need for disseminating information concerning the value of physical therapeutic measures among general practitioners. The council will gladly cooperate with societies in securing speakers and in making films available for loan to societies that are interested.

The Council on Foods has exercised a helpful influence in advertising, and its approval is much sought. Important decisions have been made with reference to advertising claims on Vitamin E, the classification of yeast products, nutritional features of diets used for reduction of weight, as well as decisions pertaining to bran, gelatin, and other products that have been widely used but the status of which has not been definitely fixed.

Bureau of Legal Medicine and Legislation. Among the subjects discussed by the director of these services the following were of particular interest:

1. The recommendation of the President of the United States of the establishment of a Federal Department of Social Welfare to administer federal health, educational and social activities.

2. Bills to establish compulsory health insurance which have been introduced into the legislatures of several states. These are patterned after the Epstein bills.

3. Uniform narcotic laws. These have been well received by state legislatures. At the time of this report the laws were in effect in thirty-one states and action was pending in seven states.

4. The Basic Science Law in Arizona was voided by their state supreme court in 1936 on the ground of technicalities with reference to the election. The bill was re-enacted by the next legislature.

5. Hospital Service Corporations. At the time of this report two states had enacted laws providing for the formation of corporations to provide hospital care for their members or subscribers. Similar bills had been introduced into eight state legislative assemblies.

6. Workmen's Compensation. Laws regarding occupational diseases had been adopted in four states and many bills were pending in various legislatures. The right of an injured employe to select his own physician has been confirmed by law in some states and similar proposals are under consideration in several other states.

7. Medical and Hospital Care for Resettlement Administration. The conclusion of the discussion was that the most satisfactory plan yet known was to arrange with the county medical societies for medical services for its clients at reduced rates, loans to be made by the administration for its clients to pay for such services.

The director predicted that the Social Security Board will ultimately make an extensive study of health insurance.

The following measures which were pending in Congress were discussed:

1. A proposal to accord to osteopaths equal rights with doctors of medicine in the treatment of federal employees under the United States Employee's Compensation Act.

2. Continued injustice to contract surgeons of the Spanish-American War. Pending investigation granting increased pensions to veterans of that service omits reference to contract surgeons.

3. The Food and Drug Act. Failure of the Seventy-fourth Congress to agree with respect to the federal agency to have jurisdiction was primarily responsible for the loss of this desirable bill. A bill in better form was placed before the Seventy-fifth Congress but the outcome is beyond prediction.

The Bureau of Medical Economics.

1. Student health activities in colleges. It was pointed out that a large percentage of the colleges and universities of the country are actually engaged in the practice of medicine and that much of their objective in health education is sacrificed by their activities in rendering health services. The Bureau believed that the generally accepted objectives are most likely to be attained by a harmonious relation between the educational institutions and the medical profession and the use of community medical facilities for the treatment of students when needed.

2. Hospitalization insurance movement a major issue. It is being actively promoted over a wide area. The following faults are included in many of the arrangements promoted or in effect: Failure to reach rural or low income groups; contracts include some medical services; apparent danger of including more medical services and thereby placing the hospitals in the practice of medicine; perpetuation of some of the very faults that medical men and hospital administrators have sought to correct; and absence of actuarial data which permit determination of sound rates.

3. "Benevolent Society" for indigent physicians under the auspices of the American Medical Association. Such proposals have been urged upon the association. The Bureau reported that it would be impracticable for the American Medical Association to organize for such purpose; that it is "inadvisable for the association to enter the insurance business."

4. Distribution of medical services. The Bureau reported that the number of schemes and plans for this purpose is rapidly increasing. They appear to give primary consideration to methods of payment for services and little or none to the quality of service and the medical ethics involved.

Bureau of Investigation reported an increasing volume of inquiries from laymen and physicians (more than 10,000 last year). It had some opportunity to be of service to federal agencies and to better business bureaus and official agencies of various cities. The Bureau reported increased usage of its lantern slides and other program materials which are available for physicians, health officers and educators.

Extension of Medical Services to Indigent. The Board of Trustees adopted the following statement and the same has been published in the *Journal*: Recognizing the existence of a group of citizens neither wholly indigent nor competent financially to meet the cost of modern medical services, the Board points out the willingness of the profession, as in the past, to provide medical services for them and to consider with other agencies the manner and methods by which the problems can be solved. The Board speaks the mind of the profession when it states that these are problems for local and state consideration rather than problems of the federal government. The willingness of the profession to adjust its services in meeting these problems should not be construed in any sense as an endorsement of health insurance, either voluntary or compulsory, as a means of meeting the situation.

Report of the Council on Medical Education and Hospitals. In 1934 the Board of Trustees authorized a survey of the medical schools of the United States. This has been done in conjunction with the Association of American Medical Colleges and the Federation of State Medical Boards. The results of the survey have been given to the individual medical schools for their own use in improving their status. Where unsatisfactory conditions were found, a warning has been given that improvement must be made within a specified time if the council's approval is to be continued. One of the more common criticisms was of too broad a base of activities in proportion to available finances. As a result, some of the schools were accepting more students than could be provided for adequately. As a result of the survey there is a definite attempt being made by the schools to correct these faults. (Information available as of January, 1938, indicated that nineteen of the schools under such criticism had increased their budget approximately one million dollars for 1938 as compared with figures submitted in connection with the survey.)

There are in this country five unapproved medical schools. One of these has admitted no students following 1935 and has declared its intention of closing as soon as the students now enrolled can be graduated, presumably in 1939.

In the annual census of hospitals which the Council conducts, it had a response from ninety-six per cent of all registered hospitals. This response represents ninety-nine per cent of the entire bed capacity of registered hospitals.

The Council approved 939 hospitals for internship and residency. This group admitted more than half of all the patients treated in the list of registered

hospitals. Hospitals for mental cases are overcrowded but general hospitals have not been occupied anywhere near to capacity.

The following special examining boards have been approved by the Council:

- American Board of Dermatology and Syphilology
- American Board of Internal Medicine
- American Board of Obstetrics and Gynecology
- American Board of Orthopedic Surgery
- American Board of Pediatrics
- American Board of Psychiatry and Neurology
- American Board of Radiology
- American Board of Urology

The future program of the Council will include a study of graduate medical education in the country. This will cover systematic courses offered in schools, hospital residences and other types of apprenticeship, continuation courses for those in practice, and the educational programs of medical societies.

Committee to Study Traffic Accidents. This committee was appointed in 1936. The following recommendations were made in a preliminary report: The adoption of uniform drivers' license law by all states; and chemical observations of the blood, urine, saliva and breath to confirm symptoms of drunkenness. With respect to alcohol the committee urged further study. The Reference Committee to which the report was referred for study recommended the uniform drivers' license law and better enforcement of existing laws but did not include that section related to chemical examination of the body fluids for alcoholic content. The report of the Reference Committee was adopted.

Medicolegal Blood Grouping Tests. The purpose of this committee was to report upon the reliability of blood grouping tests when applied in medicolegal cases for the exclusion of parentage, and in criminal cases for the individual identification of blood and other stains, with special reference to blood grouping tests for excluding parentage. After presentation of a review of the literature the following recommendations of the committee were adopted by the House of Delegates: "That, where necessary, laws should be passed which would authorize courts to order blood grouping tests in cases of disputed paternity and to receive the results thereof in evidence. Such laws should be modeled after those of New York and Wisconsin and the laws pending before the legislatures of California and New Jersey. It is also recommended that the question of qualification of medical experts should be reviewed."

Under instruction from the House of Delegates of the Iowa State Medical Society a year ago, the following resolution was introduced to the House of Delegates of the American Medical Association:

"Whereas, There is and will be continued interest on the part of the public in medical news and in various plans for provision for medical services to groups of people; and

"Whereas, Much of the publicity of the past conveys little truth in the field of discovery and much that is misleading in the field of economics; and

"Whereas, Much of the reaction and the attitude of the medical profession to said publicity is misunderstood by the public; and

"Whereas, Education by publicity requires special experience and technics largely foreign to our profession; and

"Whereas, The medical profession of this nation needs more adequate publicity and guidance in these respects; therefore, be it

"Resolved, By the House of Delegates of the American Medical Association that the Board of Trustees should employ additional and competent personnel to develop on a national scale a program of public education that will be designed to foster better understanding by the laity in the field of medical science and particularly better understanding by the public of its interests and the interests of the medical profession in the various sociologic and economic schemes and plans which involve provision of medical services."

It was presented as instructed by this House. Since it would have required expenditure of funds if it were adopted, it was referred to the Board of Trustees as provided in the Constitution and By-laws. The House adopted the report of the Board which was as follows: "The Board would report that it has given long and earnest consideration to the development of a program of public education. The Bureau of Health and Public Instruction has developed an extensive program for the education of the public, and its efforts along this line have been approved by the House of Delegates. The Board of Trustees will be glad to give consideration to further development of this plan as the need arises."

Group Hospitalization. The Ohio delegation requested clarification of policy on the question of group hospitalization, especially on the matter of defining and enumerating the services which shall not be included because they are medical services. The House adopted a report recommending the advisability of defining hospital facilities rather than to attempt a comprehensive definition of medical practice. It was recommended that the contract provided by group hospitalization insurance should be limited to the room, bed, board, nursing facilities and routine medicines ordinarily provided by hospitals.

Resolution on Administration of Anesthesia from Massachusetts. "Resolved, That the employment of nurses, technicians and lay individuals, excepting those registered in the active pursuit of a medical degree, as anesthetists or for the parenteral administration of drugs or serums is an encroachment on the field of medical practice, is basically illegal, unethical and should not be tolerated in the best interests of the patient." The action of the House was as follows: It believes that in principle the administration of anesthetics, the interpretation of roentgenograms, the interpretation of laboratory findings and the application of physical therapy measures constitute the practice of medicine and should be confined to those who are licensed practitioners of medicine. However, it believes that in practice it is at present inexpedient to urge the enforcement of this resolution.

Claims of Osteopathy. Oklahoma resolved that

the House of Delegates request the Board of Trustees to procure through the United States government an investigation by some unbiased qualified agency of the pretensions of osteopathy and of other alleged healing cults. This was referred to the Board of Trustees who replied that the matter was already under consideration.

Barbiturates. Michigan resolved that the sale of barbiturates should be placed under governmental control and that the Bureau of Health and Public Instruction be directed to proceed immediately with measures to accomplish this. The House adopted the resolution and referred it to the Board of Trustees with the request for action.

Syphilis Control. The Section on Dermatology and Syphilology resolved that the House of Delegates request the Board of Trustees to cooperate with the United States Public Health Service in connection with syphilis control and do its utmost to carry to physicians the latest available information on this subject. This was adopted by the House.

Contraception. A committee to study this subject has been in existence since the 1935 meeting. It submitted its first report in 1936, which advised a continuous study of birth control and a later report. In the meantime the United States Circuit Court of Appeals handed down to the medical profession a bill of rights in the field of contraceptive medicine, which terminated a struggle since 1873 to make clear that the federal obscenity laws do not apply to the legitimate activities of the physician, and that he may now prescribe a contraceptive in the interest of life and health. In view of the fact that a physician is now free to use contraceptives in his practice, the House of Delegates adopted the following recommendations:

"1. That the American Medical Association take such action as may be necessary to make clear to physicians their legal rights in relation to the use of contraceptives.

"2. That the American Medical Association undertake the investigation of materials, devices and methods recommended or employed for the prevention of conception, with a view to determining physiologic, chemical and biologic properties and effects, and that the results of such investigations be published for the information of the medical profession.

"3. That the Council on Medical Education and Hospitals of the American Medical Association be requested to promote thorough instruction in our medical schools with respect to the various factors pertaining to fertility and sterility, due attention being paid to their positive as well as to their negative aspects."

The election of officers was a love feast. Not a single office was contested; there was but one nomination for each. All were elected by acclamation.

San Francisco was chosen as the place for the 1938 meeting.

Fred Moore

Dr. Fred Moore: Mr. President, I move the adoption of this report.

The motion was seconded and carried.

Reports of Standing Committees

President Myers: Now we come to the reports of Standing Committees of the House of Delegates. The first is the Committee on Constitution and By-Laws. Dr. Henkin, chairman.

REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS

House of Delegates, Iowa State Medical Society:

Your Committee on Constitution and By-Laws herewith submits its report in accordance with the provisions of the By-laws.

The following amendment to the constitution was presented for first reading at the 1937 session and accordingly comes up for final reading and consideration at this session of the House of Delegates.

Amend Article IV, Section 2, of the Constitution to read: Any member of the society who is in good standing may be entitled to life membership provided he has been recommended for such membership by his county society. They shall receive the transactions of the society and enjoy all the privileges of members and may be exempted from the payment of annual dues upon the vote of the House of Delegates.

I *move* the final adoption of that amendment.

Dr. Thomas F. Suchomel: Could we have the reading of the provision in the constitution as it now stands?

Dr. Henkin: It now reads as follows:

"Life members shall consist of such members in good standing as shall have paid their full annual dues, and all other obligations to the Society, for thirty successive years, and of such other worthy members as the Society may designate by unanimous vote. They shall receive the transactions of the Society, and enjoy all the privileges of members, but shall be excepted from payment of the annual dues."

Dr. Junger: I *second* the motion.

The motion was voted upon and carried.

Dr. Henkin continued with the report from the handbook.

At a committee meeting held February 27, the Committee on Constitution and By-laws drafted the following changes which it recommends to the House of Delegates for passage at the 1938 session. The first suggested change would make permanent the Executive Council which was set up for one year at the last annual meeting. As you know, that Executive Council was authorized to act in cases of emergency during the year which is now ended. It held one meeting at which time policies of medical care for the indigent were discussed. This proposed change would make this council a permanent part of our official body, and give the State Society an interim committee with power to act in emergencies. It is as follows:

Amend the constitution, Article V, as follows: Make the present Article V read Article V, Section 1. Add the following amendment as Article V, Section 2: "The Executive Council of the Iowa State Medical

Society shall have full authority and power of the House of Delegates in the interim between duly authorized sessions of the House of Delegates. The Executive Council shall consist of the Councilors, the Board of Trustees, the President, the President-elect, the Secretary and the Treasurer of the Society. Fourteen members of the Executive Council shall constitute a quorum."

President Myers: Members of the House, this is the first reading of this proposed change, and it will lay over until the next annual session, 1939.

Dr. Henkin:

The second change is as follows: Amend the By-laws, Chapter VI, Section 5, by adding a paragraph at the end of the present section: "One trustee shall be elected from the area comprised of the first, second, third and fourth councilor districts, one from the area comprised of the fifth, sixth and seventh councilor districts, and one from the area comprised of the eighth, ninth, tenth and eleventh councilor districts. In the event that any elected trustee shall move from his own district to another as defined above, his office shall be vacated immediately and his successor appointed, or elected, as provided in the By-laws."

President Myers: Are there any remarks?

Dr. Suchomel: Doesn't that have to lay over until Friday?

President Myers: Yes, but it is open for discussion. Are there any remarks at this time? (None.)

Dr. Henkin:

The third change has been suggested in order that the business of the House of Delegates may be facilitated. It is: Amend the By-laws, Chapter IV, by adding the following as Sec. 12: "The House of Delegates shall elect a speaker of the house whose duties shall be to preside over that body. He may have the right to vote only when he is a duly elected delegate or officer of the society as defined in the constitution. The term of office of this speaker shall be three years.

"The nominating committee as provided in the By-laws shall include in its report of nominations of officers the names of three (3) members of the society as candidates for speaker. A majority of votes cast in the House of Delegates shall be necessary for election.

"If for any reason the office of speaker becomes vacant before expiration of his term, the House of Delegates shall fill the vacancy at the next annual session. A speaker chosen under these conditions shall serve three years."

Dr. Henkin: I *move* the adoption of this By-law.

Dr. Junger: I *second* it.

President Myers: It has been moved and seconded that the amendment to Chapter IV, Section 12 of the By-laws be adopted as read. Is there any discussion at this time?

Dr. W. R. Brock: I believe this amendment is a very valuable one. I have noticed in the years gone by that the president really has to preside in two different sections of this Society. I remember when I was one of the vice presidents I had to take the place of Dr. Rohlf while he went to the House of Delegates, and I presided over the general assembly. It seems to me, gentlemen, that a man who is president of this great society has so much administrative work to do during his year of office that we cannot expect him to do all the things he is doing, and doing so well. I am in favor of this change in the Constitution.

President Myers: Any further discussion?

Dr. John T. Hanna: Mr. President, I am very much in favor of having a speaker for the House of Delegates. Whether or not he should be a parliamentarian is beside the point, because I am sure most of the men who belong to the Society, especially those who rise to office, are. I believe it would be of great value in acquainting the president elect with the activities of the Society, if he were made speaker of the House of Delegates. There have been charges and counter-charges of dynasties existing in the medical society, and perhaps there is some truth in most of them. However, I believe that, as far as the rank and file are concerned, they prefer a shorter term of office, so that a man may be rewarded. I would like to move to amend the proposed change by making the president elect the speaker of the House of Delegates.

Dr. Oliver J. Fay: I want to second that motion. After seconding it, I want to say I think it is a crime and a shame to take away from Ed Myers or Arthur Erskine the pleasure they are going to have in being knocked around here in this House of Delegates. It should come somewhere in their administration, either as president elect or president. I believe the president elect would have a better understanding of what he is going to do. As it is now, the president presides over his own funeral. I think the president elect should be the speaker of the House, and I very heartily second the motion that was made.

Dr. Henkin: The purpose of this amendment was not to affect any particular individual. It should not be considered a personal matter. The suggested legislation is in line with the proposals of the American Medical Association to make the state societies operate more efficiently. One of the proposed changes it has urged is that speakers of the house be appointed by all states who have not already done so. This position requires a greater knowledge of parliamentary procedure than most doctors possess. In states such as New York and Michigan, the speaker of the house is frequently elected and re-elected because he is an efficient, technical man who can handle that job, just as you might have other men handle technical positions in the Society. Naturally whenever the change is made, some one person will have his duties curtailed, and it will always be someone we regard highly. If we amend this motion, and change it to "president elect" we defeat the purpose for which the American Medical Association has sug-

gested it. We simply make a new man take on a job requiring a great deal of parliamentary procedure, a detail which nine times out of ten he is not particularly trained to do.

Dr. Hennessy: Mr. President, I am in favor of Dr. Hanna's motion, and my reason is this: When you appoint a speaker of the House of Delegates for a term of years, you provide a good groundwork for building up a political machine within the organization, and I would be opposed to any such thing as that. It is true the American Medical Association recommends it, but I think if you attend a session of their House of Delegates, either as a delegate or as a guest, you will see there is some merit to my contention. It is an easy matter to recognize those individuals you prefer and not to recognize others. We have several officers here. If you do not want to use the president elect as speaker, you have a vice president, and a second vice president. Some difficulty has arisen at past sessions because the program has called for entertainment of out of town guests at the time the business of the Society was being transacted. It is nice to treat out of town guests courteously, but I do not believe the president of the Society should absent himself from meetings of the House of Delegates because the most important action during the year takes place at these meetings.

Dr. F. E. Bellinger: I rise to concur in the motion made by Dr. Hanna. The Iowa State Medical Society has progressed as rapidly and thoroughly as any other society in the United States. I feel that any man who has been named president elect of this Society is capable of acting as speaker of the House of Delegates of this organization. Presiding as speaker will give him a basic understanding of the workings of this institution. I do not know of any one we could nominate who would be better qualified to act as speaker of the House of Delegates than the president elect of this Society. Therefore, I would like to second the motion of Dr. Hanna so it will come before this House on Friday morning, with the understanding that the majority of us here today believe in this recommendation.

Dr. Harold A. Spilman: In case this amendment to the recommendation of the Committee is carried at the Friday meeting, having already been moved and seconded, it would be necessary to eliminate that one sentence at the end of that paragraph which specifies "the term of office of this speaker shall be three years."

President Myers: That is correct. Are there any further remarks?

Dr. Hanna: I will include that in my amendment.

Dr. A. D. Woods: I rise to a point of order. Why not strike out this whole thing and make a motion that the president elect act as the speaker of the House? If you strike out the whole thing, then you will do away with the three-year business and you will do away with the amendment. If I am in order I will make that motion.

President Myers: Your motion is in order.

Dr. Woods: I *move*, Mr. President, that we strike out this whole thing, both the recommendation and amendment, and that the president elect act as the speaker of the House.

Dr. Hanna: I will *second* that.

Dr. Lee R. Woodward: I can see a lot of technicalities would have to be worked out, and I think the matter should be left to the Committee on Constitution and By-laws to bring in to the Friday morning session, properly worked out.

Dr. Hanna: Mr. President, Dr. Woods' motion has the sense of what I wished to accomplish by my motion. As far as I am concerned, it can be a substitute motion for the proposed amendment, or you can change my motion to read the same way.

President Myers: We will consider Dr. Woods' motion which is that the president elect act as speaker of the House. Are there any remarks?

Dr. Woodward: The Constitution and By-laws, page 11, Chapter VI, Section 1, states the duties of the president shall be to "preside at all meetings of the Society and of the House of Delegates." It will be necessary to strike out the last clause in that sentence, "and of the House of Delegates." The last section in that chapter is Section 5, Duties of the Board of Trustees. You will have to add a Section 6 to that chapter on duties of officers, and have it read: "The president elect shall act as presiding officer of the House of Delegates."

President Myers: The pending motion is Dr. Woods' motion. Is there any further discussion on this motion? Are you ready for the question?

The motion was put to a vote and carried.

Dr. Henkin: The last proposed change is as follows:

Amend the By-laws, Chapter VI, Sec. 1, to make the first sentence read as follows: "The president shall preside at all meetings of the society and of the House of Delegates in the absence of the speaker of the house; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require."

John H. Henkin, Chairman
Aldis A. Johnson
Bush Houston

That is simply a restatement of the duties of the president, in view of that change in his duties. Mr. President, I *move* the adoption of that amendment to the By-laws.

Dr. Junger: I *second* the motion.

Dr. Hanna: Does that take care of the conflict?

Secretary Parker: Yes.

The motion was put to a vote and carried.

President Myers: The chairman of the Constitution and By-laws Committee will remember to bring these changes up for consideration at the Friday morning meeting. The next order of business is the report of the Finance Committee.

REPORT OF THE FINANCE COMMITTEE

The Finance Committee of the Iowa State Medical Society met in the central office in Des Moines on Tuesday, March 8, 1938. All members of the committee were present.

Twenty-four checks had been outstanding as of December 31, 1936. These had in the interim cleared and been accounted for.

The committee reviewed the audit for the fiscal year 1937, including all bills with their corresponding orders and checks, and found the audit correct. The committee therefore accepted it as prepared by Mr. Mills of Widdup and Company.

Notes for 1932, 1933, 1934 and 1935 dues in the amount of \$407.50 are being held by the Secretary. Of this total, \$52.00 is collectible for 1932 dues, \$248.00 for 1933 dues, \$27.50 for 1934 dues and \$80.00 for 1935 dues.

Ernest C. McClure, Chairman
A. S. Bowers
L. L. Carr

Dr. Ernest C. McClure: Mr. President, before making the motion I want to call your attention to the last paragraph in our report. The custom of the Trustees to take notes for past dues has been working out pretty well but they do not get all the money. With that explanation, I *move* the adoption of the report.

The motion was regularly seconded, put to a vote and carried.

President Myers: Report of the Committee on Medical Economics, Dr. Thornton, chairman.

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The Medical Economics Committee met with the Executive Council June 29, 1937, at which time the Executive Council authorized the committee to contact the official representatives of the Iowa Emergency Relief Administration and the Rural Resettlement Administration in regard to the medical program of both agencies. Accordingly, the committee met with representatives of the Rural Resettlement Administration July 25, at which time the program of the agency was explained in detail. The mandate of the House of Delegates and also of the Executive Council was that payment must be based upon the minimum fee schedule of the Iowa State Medical Society. The committee voted to devise a plan similar to those adopted in other states, and recommend it to the county medical societies.

The Medical Economics Committee met again September 10 to discuss a fair basis upon which to negotiate with the Iowa Emergency Relief Administration regarding satisfactory adjustment of the medical plan of that organization. The committee agreed that an approximation to the minimum fee schedule was desirable and that no cuts should be made. The matter of approving the Iowa Hospital Service Insurance Company was discussed, but it was decided not to approve of it at that time, but to approve the appointment of three physicians to serve

as directors of the board of the insurance company, the appointment to be made by the Executive Council.

Following this meeting, the committee met with the Board of Medical Directors of the Iowa Emergency Relief Administration, and explained its viewpoint as to the medical program of the administration. The Board of Directors agreed to carry this viewpoint to the full Board of Directors of the Iowa Emergency Relief Administration.

The work of the Medical Economics Committee was divided, in order to facilitate study and handling of matters. Dr. Shaw assumed the responsibility for editorials in the Journal; Dr. Hill for data concerning rural resettlement and social security problems; Dr. Moerke for questions of hospital and medical insurance; Dr. Hennessy the investigation of plans for medical care of the indigent and low income groups; and Dr. Thornton for supervision of collection agencies.

On December 12, the chairman of the committee met with the Committee on Child Health and Protection to discuss procedures for giving the Summer Round-Up and 4-H Club examinations. A conference was held with officials of both groups, after which the committee discussed changes which would make the work more satisfactory to the medical profession.

Dr. T. F. Thornton: Your Committee begs leave to submit the following supplemental report:

The Medical Economics Committee met in the central office at one o'clock on Thursday, March 10. Present were Doctors T. F. Thornton, E. E. Shaw, and A. C. Moerke.

The first order of business was a discussion of Summer Round-Ups, and it was moved, seconded, and carried that the Medical Economics Committee present the following resolution to the House of Delegates at the next annual meeting, and recommend its adoption:

"It is recommended that Summer Round-Up examinations be made in the office of the family physician during certain hours designated for that purpose. It is also recommended that the fee for such examinations be set by each county medical society after consultation with the Parent-Teacher Association. In the case of children from known indigent families, the examination should be made in the family physician's office whenever possible, and payment should be made by the sponsoring agency, the Parent-Teacher Association, after consultation with the county medical society as to a reasonable fee. Those counties having other plans for carrying on the work which are giving satisfactory results may wish to continue as at present. It is not the wish of the Medical Economics Committee to govern participation in the Summer Round-Ups by a rigid set of rules, but rather to offer a procedure for those counties which have not arrived at a workable plan. The above plan is one which has been very satisfactory both to the medical profession and the Parent-Teacher Association."

A letter from the Marathon Finance Corporation regarding the bond for \$25,000 which the company has furnished in the past, was read. The company

is willing to provide the bond, but feels the State Medical Society should pay the fee. After careful consideration, the Committee decided that the company had shown its intention to carry on the work satisfactorily, and the bond seemed unnecessary. It was therefore moved, seconded, and carried that the Marathon Finance Corporation be permitted to act in the coming year without bond, in view of its satisfactory performance in the past.

The examination of 4-H Club boys and girls was discussed, and it was moved, seconded and carried that the following recommendation be presented to the House of Delegates at the next session:

"The Medical Economics Committee recommends that a fee be charged for 4-H Club examination, the amount of the fee to be set at a reasonable figure by the county medical society. It is further recommended that all preliminary examinations be made in the office of the family physician, and that a Committee be appointed by the county medical society to give the final examination."

Dr. Shaw reported on his trip to Albia where he met with members of the Monroe County Medical Society and officials of the Farm Security Administration. He explained the set-up which is being proposed, and said that this government agency was trying to rehabilitate the families under its care, with very good results. He felt the medical profession might well work with the agency. The plan is to budget the medical needs of each family having a loan with the agency, and then provide money, through a loan, for that need. The money is set aside for medical care, and the physician's bills are charged against it. The physician, however, agrees to care for the family for a year, whether or not the money is sufficient for that period of time. The plan makes the people conscious of the need for allotting a certain amount of money yearly for medical care, and also keeps the family in the habit of consulting the family physician, and would make them into good paying patients eventually. The drawback lies in the fact that the money borrowed may not be adequate to cover unusual illnesses, but the physician is obligated to render service in spite of that fact. It was decided to write Mr. Anway of the Farm Security Administration and procure from him information as to the number of families under his charge in Iowa, the names of the counties in which the work is being carried on, the total amount loaned and the repayment rate, so that full information will be available at the annual meeting of the House of Delegates.

Your Medical Economics Committee also had a meeting today, and we wish to report: The Medical Economics Committee recommends that the Iowa State Medical Society cooperate with the American Medical Association to conduct a survey on medical care, and that this be done through the Medical Economics Committee with the cooperation of the Councilors and Deputy Councilors.

The Medical Economics Committee also recommends that the fees for emergency cases of the Farm Security Administration be decided by the local

county medical society and that a committee of the county society be the judge of bills rendered, using the fee schedule of the Iowa State Medical Society as a basis, and that the fees as approved by the county medical society be not subjected to a cut by the Farm Security Administration. Mr. President, I move the adoption of this report.

The motion was regularly seconded, put to a vote and carried.

T. F. Thornton, Chairman
A. C. Moerke
James C. Hill
M. C. Hennessy
Ernest E. Shaw

President Myers: The report of the Committee on Medical Education and Hospitals, Dr. Treynor, chairman.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The Committee on Medical Education and Hospitals was not called upon for much activity during 1937. However, the chairman was appointed to the Board of Directors of the Iowa Hospital Service Insurance Company, and attended two meetings of that board in his official capacity. He wishes to state that it is the feeling of the committee that the company is now sound and is well managed, and should be of extreme usefulness to the hospitals and physicians in the state of Iowa. The management and other members of the board of directors of the insurance company have been very cooperative and receptive to the ideas of the medical profession as expressed by the three directors, and show no disposition to encroach upon the field of medical practice. On the contrary, definite evidence has been shown that the insurance company feels the inclusion of contracts for medical service as well as hospital service would be impracticable and detrimental to the success of the hospital insurance idea.

Jack V. Treynor, Chairman
T. F. Hersch
J. E. Brinkman

President Myers: Dr. Treynor is absent. Can anyone speak for him? We will pass that. Report of the Medico-Legal Committee, Dr. Ely, chairman.

REPORT OF THE MEDICOLEGAL COMMITTEE

The past year has been a very uneventful one for the Medicolegal Committee. There has been only one malpractice suit reported and this never came to trial.

Our committee still has under consideration the advisability of recommending alterations of the By-Laws for the purpose of avoiding any suspicion that we are invading the province of the legal profession, but since a legal adviser of high repute has advised us that the necessity for such alterations is questionable, the matter will be deliberated upon further before recommendations are made. It has seemed inadvisable at this time to publish the opinion given by the attorney mentioned above.

The fact that the Medico-Legal Committee has had little to do with the defense of its members during the past year does not necessarily mean that there has been any reduction in the number of actual and threatened malpractice suits, but it does indicate that society members have become more conscious of the security which is residual in commercial malpractice insurance because of its indemnity features.

F. A. Ely, Chairman

Dr. Ely made a verbal supplementary report (off the record), and, at his request, Secretary Parker made some comments.

Dr. J. F. Loosbrock: The medical profession as a whole has always objected to anything that looked like the corporate practice of medicine. Therefore, I think we are at least morally obligated not to indulge in any sense in the corporate practice of law. For that reason, I feel that Dr. Ely's suggestions require further study.

Dr. F. E. Bellinger: I have talked to Dr. Ely in regard to this matter because in the past I have been on the Medicolegal Committee myself, and this subject is important enough to the society of the state of Iowa and to the House of Delegates that we should ask the Medicolegal Committee to give us until Friday for further study and for further thought. Dr. Ely's suggestions are worthy of serious consideration. I do feel there should be some change made because we might get into trouble.

Dr. Ely: Mr. President, the thing lines itself up this way. Either we will consider that the function of the Medicolegal Committee and the defense features are nil with the exception that the Medicolegal Committee be continued as advisors to our members, doing away with the defense features; or, in my opinion, we should alter the words in our By-laws so as to evade trouble. I think probably the defense features should be continued.

Dr. Oliver J. Fay: I move that the proposed change as suggested by Dr. Ely, be taken up by the Committee on Constitution and By-laws, so that it may be placed before this evening session. The only sensible thing is to put the opinion of a lawyer before the House in the right way.

The motion was seconded, put to a vote and carried.

Dr. Ely: Mr. President, I move the adoption of the report of the Medicolegal Committee as it appears in the handbook of the Iowa State Medical Society.

The motion was seconded, put to a vote and carried.

President Myers: The Committee on Necrology, Dr. Reeder. Will the House please stand in reverence while the names of the deceased are read?

REPORT OF THE COMMITTEE ON NECROLOGY

During the year 1937 death has come to fifty-three of our colleagues. The youngest was thirty-four years of age and the oldest ninety-one. Seventeen of these physicians died from causes not stated; fourteen of heart disease; five of apoplexy; three of pneumonia; two uremia, and two accidental. There

was one death each from stomach disorder, knee operation, pulmonary embolism, Parkinson's disease, diabetes, coronary thrombosis, septicemia, abscessed lung following bronchitis, complications of anemia and cancer.

May we stand in a quiet memorial to our departed colleagues, while their names are read?

M. C. Hennessy, Chairman
James E. Reeder, Secretary

The members stood in silent tribute as the names of departed members were read by Dr. Reeder.

Dr. Ellyson: There is one error. It should be Frank W. Porterfield instead of Porter.

President Myers: The Secretary will make that correction. We will now hear the report of the Committee on Publications.

REPORT OF PUBLICATIONS COMMITTEE

For the information of the House of Delegates the Publications Committee submits the following statistical table, comparing the major items in regard to the *Journal* for the past three years.

	1935	1936	1937
Reading Pages	710	720	672
Advertising Pages	318	320	316
Percentage of Reading Material	69.1%	70%	68%
Original Articles	139	129	96
Editorials	49	47	59
Total Cost of Journal	\$12,187.22	\$12,791.05	\$12,214.10
Total Journal Income	7,937.38	8,308.57	7,566.09
Net Expenditure for Journal	\$ 4,249.84	\$ 4,482.48	\$ 4,648.01

NAME	Town	Age	Date of Death	Cause
Augustine, Jasper L.....	Ladora	69	Nov. 3, 1937	Parkinson's Disease
Ayers, Franklin D.....	Sabula	70	June 24, 1937	
Bacon, Lyman B.....	Pacific Junction	77	May 14, 1937	
Busby, Charles D.....	Brooklyn	66	Jan. 8, 1937	Septicemia
Call, Merlyn B.....	Greene	54	July 14, 1937	Uremia
Christensen, Christen J.....	Jewell	63	Nov. 8, 1937	Pneumonia
Coleman, Harry L.....	Farragut	70	Jan. 23, 1937	Heart
Coontz, Jesse S.....	Leon	61	Feb. 28, 1937	
Cutler, Frank R.....	Cedar Falls	49	Nov. 4, 1937	Pneumonia
DeBey, Albert	Orange City	76	Aug. 5, 1937	
Dorsey, Frank B.....	Keokuk	79	Sept. 8, 1937	Stomach disorder
Finch, Hiram C.....	Pulaski	83	Mar. 7, 1937	
Frazier, James W.....	Honey Creek	77	Nov. 21, 1937	
Fry, Jay W.....	Creston	62	Nov. 6, 1937	Apoplexy
Fuller, Quintus C.....	Milford	70	Sept. 24, 1937	Accidental
Galvin, Joseph E.....	Fort Dodge	46	April 18, 1937	Heart
Graves, Dorr	Gilman	89	Aug. 15, 1937	
Groom, William S.....	Conway	78	Aug. 4, 1937	
Hamilton, John	Cedar Rapids	66	Oct. 23, 1937	Heart
Hewitt, Leland G.....	Northwood	70	Jan. 31, 1937	Abscessed lung following pneumonia
Hohenschuh, Frank A.....	Clinton	62	April 28, 1937	Accidental
Johnson, Cecil C.....	LeClair	60	Feb. 8, 1937	
Kase, Paul, Jr.....	Northwood	34	Mar. 21, 1937	Heart
Kauffman, Edward C.....	Union	65	Sept. 16, 1937	Heart
Kessler, James C.....	Iowa City	56	Jan. 1, 1937	Apoplexy
Killeen, Mary A.....	Dubuque	65	July 16, 1937	
Leech, Louis J.....	West Branch	91	Sept. 23, 1937	Knee operation
Long, William E.....	Mason City	66	Nov. 25, 1937	Apoplexy
Lowry, James D.....	Ft. Dodge	61	Feb. 10, 1937	Complications of anemia
McAlvin, James G.....	Waterloo	67	April 14, 1937	Diabetes
McDevitt, Charles S.....	Des Moines	56	Jan. 24, 1937	Pneumonia
McFarland, John	Centerville	83	Oct. 5, 1937	Heart
McLaughlin, Alphonso J.....	Sioux City	60	April 18, 1937	Apoplexy
Moore, John H.....	Liberty	67	June 4, 1937	Apoplexy
Newland, John E.....	Center Point	43	Mar. 13, 1937	Cancer
Osborn, James W.....	Des Moines	78	May 21, 1937	Heart
Parriott, Robert P.....	Des Moines	64	Aug. 25, 1937	Coronary thrombosis
Penquite, Harry H.....	Massena	51	Nov. 16, 1937	Heart
Porterfield, Frank W.....	Waterloo	75	Dec. 21, 1937	Uremia
Quinn, Charles F.....	Cherokee	78	June 8, 1937	
Rawson, Charles D.....	Des Moines	85	June 19, 1937	
Schroeder, Peter H.....	Davenport	57	Jan. 19, 1937	
Shipley, William M.....	Ottosen	64	Oct. 30, 1937	
Spaker, Everett E.....	Lake View	60	Aug. 30, 1937	Heart
Sperry, Wade	Hamburg	76	Sept. 8, 1937	
Syp, William W.....	Centerville	64	Mar. 3, 1937	
Tamisica, Hugh	Missouri Valley	61	Dec. 18, 1937	Heart
Thornber, Amos J.....	Burlington	68	Oct. 24, 1937	Pulmonary embolism
Wagner, George A.....	Van Horne	59	June 5, 1937	Heart
Willett, Charles A.....	Norwalk	61	Dec. 29, 1937	
Wilson, Edmund W.....	Rolfe	70		
Wistein, Rosina R.....	Cedar Rapids	69	Feb. 23, 1937	Heart
Woodbury, Ernest I.....	Burlington	66	April 9, 1937	Heart

Number of State Society Members	2,297	2,355	2,379
Net Expenditure per Member, based on Year's Membership	\$1.85	\$1.90	\$1.95

We wish to invite your attention especially to total journal income for the three years. It will be noticed that the income for 1937 was approximately \$750.00 less than for 1936. As you know the only source of income for the *Journal* is that derived from the advertising material carried in its pages. Thus a decided drop in revenue from this source occurred in 1937; and judging from the present trend of advertiser's methods, the year 1938 is almost certain to see a still further decrease. Commercial houses are apparently adopting the attitude that advertising in medical journals is no longer as important as other means of advertising. Continuation of this tendency would lead to a serious reduction in the *Journal's* only source of income, and would consequently impose a greater per capita cost upon each of our members if the present high quality of our publication is to be maintained. It should be pointed out that the appearance of commercial products in the advertising pages of ethical medical journals provides the practicing physician who prescribes them with a guarantee that such products are reliable. In fact if physicians everywhere were to restrict their prescribing of commercial products to only such as are accepted for advertising, all such tragic catastrophes as occurred recently with elixir of sulfanilamide would be avoided. We would urge that, through this House of Delegates, the membership of our society be asked to convey to commercial houses their preference for the continuation of advertising in the *Journal*.

In further report on the year's activities the Publications Committee wishes to record its approval of the high quality of the scientific articles it has reviewed and accepted for publication. The faithful reader has been supplied with ample material to keep him well abreast with the modern developments in all branches of scientific medicine. A particular effort has been made in the editorial columns to keep pace with the more important of the social and economic developments affecting the practice of medicine. In its function as the official house organ of our society an earnest endeavor has been made to record the activities of the officers and various committees. At the request of the Woman's Auxiliary, the page carrying this news is now being reprinted and mailed directly to each member. This was done in answer to the complaint that physicians kept the *Journal* at the office instead of taking it home.

Every effort is being made to improve and enlarge upon the value the *Journal* may have to our society. In this endeavor we earnestly solicit suggestions and beseech your continued cooperation.

Lee Forrest Hill, Editor

President Myers: No action will be taken at this time due to the absence of Dr. Hill. We will now have the report of the Committee on Public Policy and Legislation, Dr. Fred Moore.

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

A supplemental report will be given from the floor. In these pages the committee wishes to call attention to a recent decision of the Supreme Court of Iowa in the case of the State of Iowa versus Charles J. Boston, chiropractor. It is of importance to us because in all probability it indicates one kind of legislative effort which will be made in the next legislature by one division of the chiropractic school. In the last legislative assembly a determined effort was made to open up the field of medicine to chiropractors by changing the statute to include all forms of physiotherapy and electrotherapy in their practice. The bills were lost in reference committee. Up to the closing day of the session, an opportunity was sought to reintroduce these bills. There is every reason to believe that the attempts will be repeated.

In the case of Iowa versus Boston, action was brought to restrain the defendant by injunction from alleged unlawful practice of medicine. From the decree of the trial court both parties appealed.

The court record shows that the defendant held himself out as a chiropractor and physiotherapist. His advertising included chiropractic, physiotherapy, electrotherapy, colonic irrigation, and diet. The injunctive portion of the decree of the trial court was as follows:

"Wherefore, It is ordered, adjudged and decreed that the defendant, Charles J. Boston, be and he hereby is forever enjoined from the use of physiotherapy, electrotherapy, colonic irrigation, colon hygiene, ultra violet rays, infra-red rays, radionics machines, traction tables, white lights, cold quartz ultra violet light, neuroelectric vitalizer, electric vibrator, galvanic current and sinusoidal current for the purpose of treatment of the sick or for any other purpose in connection with his practice of chiropractic and from the use of medicine and surgery and from prescribing certain or specific course of diet for any patient as an independent remedy or means of treatment. Defendant is not enjoined from using his reasonable judgment in recommending to a patient certain changes in diet, exercise or such of his general habits as affect his health but is enjoined from prescribing any specific or certain course of diet as above set out.

"The defendant is further enjoined from advertising his use of physiotherapy, electrotherapy, colonic irrigation, colon hygiene, ultra-violet rays, infra-red rays, radionics machines, traction tables, white lights, cold quartz ultra-violet light, neuroelectric vitalizer, electric vibrator, galvanic current and sinusoidal current or any of them in the treatment of the sick or as an aid to or preliminary or

preparatory to his use of chiropractic or in any other way holding out to the public that any of these means or modalities may be or are used by him in the treatment of the sick or as an aid to or preliminary or preparatory to the use of chiropractic or for any other purpose and from assuming or publicly professing to assume the duties of a physician and surgeon or from using mechanical or electrical means or modalities in the practice of chiropractic or as an aid to or preliminary or preparatory to the use of chiropractic or from using or publicly professing to use any mode or general course of treatment other than chiropractic adjustments, and the clerk is hereby ordered to issue an injunction in accordance with this decree."

The Supreme Court of Iowa approved the decree of the trial court but added to it as indicated in the following statement from the opinion of the Supreme Court.

"We approve the decree as restraining the defendant from professing to and treating human ailments in modes and manners outside the field of chiropractic, *excepting that the defendant should have been wholly enjoined from the prescribing for or the advising his patients with respect to diet.*"

Your committee is pleased with the action of the Board of Trustees in enrolling the Iowa State Medical Society as a member of the Iowa State Safety Council. We believe that it is appropriate for our profession to be a member of that organization and that our influence should be exerted therein to obtain such laws as will contribute to the greater safety of our highways. In this connection it is safe to predict that in the next legislature bills will be introduced which will set up statutory standards for the determination of drunkenness. Your committee believes that our Society should promote and support such legislation provided that science can furnish adequate physiologic standards for such determinations. This and broader aspects of prevention of motor vehicle accidents were considered by a committee of the House of Delegates of the American Medical Association appointed in May, 1936, at Kansas City. The committee reported in June, 1937. The following is the statement of that committee regarding alcohol. Please note that this committee made no recommendations to the House of Delegates regarding alcohol.

"The relationship of alcohol to traffic accidents demands further study. It is a surprising fact that the excess in the number of accidents over the expected number as calculated from traffic volume corresponds to the peaks in alcohol accidents as confirmed by chemical examination.

"Since it is impossible to diagnose drunkenness adequately—drunkenness from the symptoms alone—it is important that the chemical observation of the blood, urine, saliva or breath for alcohol be used to confirm obvious intoxication. The Committee on the Driver of the National Safety Council has agreed that 0.15 per cent or more of alcohol by weight in body fluids is associated with mental and/or physical

inferiority and that this figure is therefore valuable in legal cases. It must be understood, however, that much lower levels of alcohol are associated with definite impairment of judgment and particularly of self criticism. Also the attitude of this committee on the subject of alcohol concerns only traffic safety, and therefore drinking is considered only from the standpoint of time and place."

This report, as is the custom in the House of Delegates of the American Medical Association, was referred to a reference committee whose duty was to study it and report back to the House of Delegates. The reference committee did not refer to alcohol in its report to the House. The only positive action of the House of Delegates was to advocate a standard drivers' license law and urge legislative committees of the various states to extend their activities to this end. The Iowa drivers' license law is essentially in accord with this standard.

Because medical testimony regarding drunkenness is made to look ridiculous when there are no legal standards for determining drunkenness, your committee believes that efforts to establish such standards should have our support.

When the time comes for consideration of the details of such bills, they should have the best talent in physiologic applied chemistry which our membership affords. Your committee recommends that this House of Delegates go on record as favoring the adoption of such standards.

It is the opinion of your committee that this Society should support legislative bills which will require that all persons applying for marriage licenses present a statement from a licensed doctor of medicine certifying that they are free from venereal infection. The reasons for this are too well known to warrant taking your time for discussion.

Fred Moore, Chairman
R. D. Bernard
E. L. Wurtzer

Dr. Moore: Mr. President, there are some things in the report of the Committee on Public Policy and Legislation which we would like to discuss briefly but which we do not care to have made a part of the published record. Before we take up that part of it, I *move* the adoption of the report as printed, Mr. President.

The motion was regularly seconded, put to a vote and carried.

Dr. Moore: In connection with the printed report there is a resolution which the Committee has to offer, and I ask your advice as to whether it should be presented now or as a matter of new business. It is a recommendation that the House of Delegates go on record with reference to legislation in regard to alcoholic intoxication.

President Myers: It would properly be new business.

Dr. Moore: I think the House will be interested in a report of what has happened in the field of licensure since the basic science bill went into effect in July, 1935. The law is not yet fully in effect because all students registered as of July 1, 1936, are

exempted from the requirements of the basic science law, but in this interval the medical board has issued licenses to 136 doctors who have had to come before the basic science board. The chiropractic board has licensed one man; and the osteopathic board has licensed eight who have had to come through by way of the basic science board. I do not know the total number of licenses issued by these boards in this interval. I am only giving you the results of the application of the basic science law. I am sure you will agree that the law is contributing to better standards of practice in the field of the healing arts in Iowa.

Several weeks ago your Committee sent out a bulletin calling attention to a decision of the Supreme Court with reference to the practice of physiotherapy by chiropractors, and in that report we prophesied that in the next legislature we would undoubtedly be faced by bills which would provide an extension of rights in that respect. The only resource that the chiropractors have left now in the field of physiotherapy is to have the statutes changed. I merely want to call that to your attention at this time, so that you may bear it in mind and realize that we will have to face that problem again in the next legislature. Now, with approximately a month remaining before the primary elections, is the time to make careful selections of good men to become members of the state legislature in Iowa. We hope that every one of you, in your respective county units and senatorial districts, will use all of your influence in obtaining the selection of the best men possible. The character of the next legislature will be determined in considerable measure in the primaries. If we can eliminate unworthy candidates in the primaries, then we have less to be concerned about in the elections in the fall.

There is nothing in this report about the interprofessional activities which have been carried on by this Committee in accordance with instructions from this House of Delegates. It is not in this report because we believe that the type of promotion most desirable is that which is done in a quiet manner and without publicity. I would like, Mr. President, to ask Dr. Bernard, who is a member of the Committee and President of the Interprofessional Association, to present the report for the committee concerning interprofessional activities. Dr. Bernard has done a self-sacrificing and very effective piece of work.

President Myers: Dr. Bernard, will you respond to this request?

Dr. R. D. Bernard: Mr. President. I think you all know the history of the Interprofessional organization. This report is a slight compilation of the work of the past few years. One-third of the counties have interprofessional groups. Ten counties have had preliminary meetings and should be organized before the annual meeting in June. Eight counties have expressed a desire to organize but I have found it impossible to send men to them to complete the organization. Thirteen counties will not need an or-

ganization because of their proximity to well organized counties. Sixteen counties should be organized into bi- or tri-county groups. This requires many hours of conferences and miles of travel. I find that there is usually a special problem in each county, which is not difficult to solve "on the ground" but cannot be cared for by correspondence. Two counties have well organized legislative committees of their own. One of these does not feel the necessity of joining the state group. The remaining counties (seventeen) have shown little, if any, interest. Our meetings have been exceptionally well attended, ranging from 40 to 165. We have stressed the necessity for cooperation among the five groups. We have urged the groups to use this organization as a clearing house for their many common problems and as a forum for discussion of new and complicated laws. The Social Security law has been the most popular subject for discussion. Among the state groups there has been exceptional cooperation, and they are all sold on our method of organization. The loose tie-up is a most popular feature. I have received many inquiries from other states. Our organization apparently rates very high. We have felt that one meeting a year would be sufficient and that September would be the logical month for this meeting. The suggestion of Dr. Fred Moore that each group devote one-half day of its annual convention program every five years, thus rotating an annual statewide meeting, has been well received. The Iowa State Nurses' Association has invited us to meet with it next November 12, and plans are well under way to make this an outstanding program. I want to amplify this state convention just a little more. Dakota attempted to have a statewide convention every year. It interfered with the state conventions of the other five component groups, although they had one meeting with 1,200 present, and an outstanding program. Two other states attempted a state program, and it met with decided opposition from the component groups, who felt that perhaps the interprofessional organization was going to obscure and overshadow the component groups. As Dr. Moore said a moment ago, we have done this very quietly. You have never seen anything in the newspapers about it. Because of the nature of the organization, we felt that it would be better to work along in a quiet way and accomplish the organization without too much publicity. We do feel, however, that we should recognize some state meeting. This plan of Dr. Moore's means that once every five years this Society and other societies will devote one-half day to the interprofessional organization. As I remarked in this report, the nurses have invited us for November 12, and plans are well under way for the program. The druggists are considering inviting us during a legislative session next year, in 1939. This resolution which we will bring to you under new business will ask you to endorse the plan for our Society.

President Myers: Thank you, Dr. Bernard, for your report.

Dr. Moore: That concludes our report.

Dr. Hennessy: I would like to ask Dr. Moore what

the injunction against the basic science law at Sioux City meant.

Dr. Moore: It makes it a better law. It refers to an amendment that was written into the proposed measure, not with our consent; neither did we oppose it vigorously. At the time criticism was directed very severely against the basic science bill in the legislature. The legislators objected to the theory involved in it. When that was explained, when the criticisms were answered to the satisfaction of the legislators, they said they would meet with a partisan board. When the objections were met, then the criticism was made, by the chiropractors particularly, and the osteopaths to some extent, that the time requirements of the basic science law were already met by their courses. Mr. Putnam, who handled this bill on the floor of the House, a representative from your county, then conceived this idea. He said, "Here, we will say to those people that, if they have fulfilled the time requirements of this law, we waive the examination." He said, "Now, where is the organization that we can accept as a standard?" Well, there just wasn't any, because when you went outside the schools of the healing arts, you didn't have any school which taught those subjects. But the North Central Association of Secondary Schools and Colleges had great appeal to him. It includes a large number of colleges in, I would say offhand, about seventeen central states, but only a very few, in fact, only those universities who have medical schools, provided these courses. He was perfectly right, from the political point of view, when he offered that amendment. It attracted almost all of the votes in the House, and the thing went over with a bang; but immediately the small colleges in Iowa who were not recognized by the North Central Association of Secondary Schools and Colleges protested and asked an injunction against that part of the law which permitted the recognition of students from the North Central Association of Secondary Schools and Colleges. The injunction was granted against that particular thing, and we were glad to see it granted. The net effect is really to make a better law. It is not the best type of legislation. By that, I mean the most desirable type of legislation is not that which you get by permanent injunction. In this instance that part of the bill was wished on us, and we accepted it as a matter of expediency; and, also, as a matter of expediency, we felt the simplest way to get rid of it was by permanent injunction.

Dr. Hanna: Does that prevent the board now from giving certificates to doctors who have completed the work, if they have taken the examination?

Dr. Moore: No. It merely denies the board the right to grant certificates on the basis of work taken in schools approved by the North Central Association of Secondary Schools and Colleges. As far as the injunction is concerned, it really has very little effect on the law.

Dr. Hanna: Can a doctor get a certificate now, if he is credited with doing that work?

Dr. Moore: You mean if he is licensed to practice? There is no certificate available to him. He doesn't need one, as far as Iowa is concerned, because he was licensed before that time.

Dr. Hanna: A lot of doctors have them.

Dr. Moore: That was a gesture in support of the board.

Member: How about reciprocity?

Dr. Moore: The board has pretty wide discretion. It has the power to waive the examination and issue a certificate to men who have taken the examination covering these subjects before other boards, if, in the judgment of the basic science board, those boards maintain adequate standards.

President Myers: We will revert to the report of the Committee on Publications. I see Dr. Hill, the chairman, is here.

Dr. Lee Forrest Hill: Mr. Chairman, there is just a word I want to say about this report, particularly about the financial end of it. You will notice that we ran about \$750 behind our previous advertising income. There is a trend, on the part of the advertisers, to do their advertising through direct advertising and free samples and not through the journals. I would particularly urge you delegates to have the members of your respective medical societies ask the detail men who visit them if their product is advertised in the JOURNAL. There are two reasons for that; not only will we be saving ourselves some money if we can convince the commercial houses to advertise their products in the JOURNAL, but we protect ourselves. It seems to me it is extremely wise for medical men to use those products which have been advertised in the JOURNAL and which have been accepted by the Council on Pharmacy. I have only to call your attention to what happened with elixir of sulfanilamide. If those physicians had limited their medicines to Council accepted ones, those deaths would not have occurred.

I move the adoption of the report.

The motion was regularly seconded, put to a vote and carried.

President Myers: We will now consider the reports of special committees of the House of Delegates.

REPORT OF THE BALDRIDGE-BEYE MEMORIAL PRIZE COMMITTEE

The essays submitted in the Baldrige-Beye Memorial Prize contest will not be placed in the hands of the committee members until some time in the spring of 1938. As soon as they are received, the committee will judge them carefully, and the name of the prize-winner will be announced at the annual meeting of the Iowa State Medical Society in May.

Julius S. Weingart, Chairman
Emerson B. Dawson
Herbert W. Rathe

In the absence of the chairman no action was taken.

President Myers: The Committee on Child Health and Protection, Dr. McBride, chairman.

Reports of Special Committees

REPORT OF THE COMMITTEE ON CHILD HEALTH AND PROTECTION

The Committee on Child Health and Protection met in Des Moines in September and reviewed the film, "The Birth of a Baby," and approved it for public showing. The committee also reviewed the pamphlet, "Maternal Care," published by the American Committee on Maternal Welfare; this was approved for distribution to the practitioners throughout the state by the State Department of Health.

At a suggestion which originated outside of the committee, a meeting was held at Des Moines in December, at which time an effort was made to formulate a statewide policy for the preschool examinations and the 4-H Club examinations. This meeting was held with the cooperation of the Medical Economics Committee. A satisfactory program was reached with the officers of the Summer Round-Up Committee. Negotiations are still in progress with the 4-H Club leaders and we hope to formulate a program with them which will be much more effective for their group.

Robt. H. McBride, Chairman

Dr. Hill: I *move* the adoption of that report, in Dr. McBride's absence.

Dr. Bierring: I *second* it, and would like to ask the Secretary to make a correction in there, from "State Board of Health" to "State Department of Health." We have an advisory State Board of Health which is an administrative agency of the State Department of Health.

The motion was put to a vote and carried.

President Myers: Historical Committee, Dr. Biering.

REPORT OF THE HISTORICAL COMMITTEE

The Historical Committee has published each month additions to the medical history of Iowa. Important contributions have been made to the early history of medical education. The historical development of bacteriology at the University of Iowa has been presented. Interesting experiences of pioneer practice have been recorded.

It is becoming increasingly difficult to collect historical data that have not been previously published, and the committee urgently enlists the interest and cooperation of society members in completing an accurate medical history of Iowa insofar as it is possible.

Walter L. Bierring, Chairman

Dr. Bierring: I *move* that the report as published in the handbook be adopted.

The motion was regularly seconded, put to a vote and carried.

President Myers: We will have the report of the Medical Library Committee by Dr. Dean-Throckmorton.

IOWA STATE MEDICAL LIBRARY

Statistics

Letters requesting literature.....	1,778
(Special delivery 4; telegrams—3)	
Local requests for literature.....	1,487
Total	3,265
Patrons served in the library.....	2,763
Pieces of literature loaned.....	14,778
Letters written	1,927
Cards written	1,929
Telephone calls, incoming (Long Distance 6)....	807
Accessioned volumes in Library June 30, '37.....	20,227
Periodicals received by paid subscription.....	145
Periodicals received by gift subscription.....	62
Gifts to the Library.....	19,542
(Including books, periodicals, reprints)	
Gifts to Library Museum Exhibit.....	4
Con R. Harken, Chairman	
Jeannette Dean-Throckmorton, Librarian	

Dr. Jeannette Dean-Throckmorton: Mr. President, I have two things to tell you about the Medical Library. The distressingly crowded condition has been ameliorated. Two hundred subscriptions came in. The tops of the shelves were filled and then the tops of the stacks, and then all of the available tables and, lastly, the window sills. This slowed down the work of getting the literature into the mail because the journals needed were generally at the bottom of the pile. Last summer we were given an extra room, a small one, formerly occupied by the bookkeeper. I asked that the walls be lined with shelves, with an extra stack through the center, which was done. Now the shelf room in the Medical Library is taken care of for about the next two years. The second thing I wish to tell you is not so cheerful. The appropriation for the Medical Library has been \$2,500, of which \$1,500 went to pay subscriptions. During the depression there was a cut of \$500. Last fall, unexpectedly, there was another cut of \$500. Now, \$1,000 is a lot of money, and its loss cripples the Medical Library. In closing, if you please, I want to thank you for your generosity. You will notice by your handbook that you and your friends gave the Medical Library last year 1,500 pieces of literature. These were your reprints, your old journals and books. You ask why I want these old journals. I do want your old journals, especially the old Iowa journals. Last week I sent to England twelve volumes of our Iowa journals to King's College, Newcastle-upon-Tyne. As I look at our Iowa publication, I feel it compares very favorably with other journals and deserves a place in British libraries; but how can the doctors of England know the value of our journal if they never see one? I am trying to do a little foreign missionary society work. I am going to ask you to help me. Just drop me a postal card, and I will send you some labels and tell you the cheapest way to get that material to the Medical Library because I need your old

journals. I have thanked you for your material gifts and, important though the material gifts are, even more important are the gifts that are intangible—your influence, your interest and your praise of the Medical Library. These intangible gifts kept the Medical Library here in Des Moines and made possible a continuation of this mailing service to any of the counties. You have been very generous. There is no service I can give to you that is too much bother to take. The Medical Library is yours and, for your generosity and for your influence, I am saying, "Thank you."

President Myers: Do you want to *move* the adoption?

Dr. Dean-Throckmorton: If you please.

The motion was regularly seconded and carried.

President Myers: The next order of business is the report of the Fracture Committee.

REPORT OF FRACTURE COMMITTEE

The Fracture Committee, in its first year of existence, has attempted, first, to complete a statewide organization and, second, to emphasize two or three phases in the care of fractures. The central group of seven members held three meetings during the year. At these sessions the basic problems which were to be presented to the larger group were outlined. The committee as now constituted has in its membership the seven members of the central group as appointed by the House of Delegates and one member from each county society, either appointed or elected by its own body.

On November 17, 1937, the committee held an all day meeting at the Hotel Fort Des Moines which was attended by 74 committee members and guests. A program arranged by Dr. W. E. Wolcott of demonstration of fracture treatment was presented by seven Des Moines clinicians. This was augmented by a paper by Dr. Herman Johnson of Omaha. Following the clinical portion of the day, a period of two hours was devoted to organization plans and aims of the committee. It was first agreed that this meeting be made an annual affair. It was further suggested that one meeting a year in each county unit be devoted to the subject of fractures. Emphasis the first year was to be directed toward improving the service in transportation of fractures. To this end the morticians were to be contacted since over eighty per cent of ambulances are operated by these agencies. Lastly, a fracture exhibit was to be maintained at the state meeting under the direction of the committee.

The group feels it has made only a slight dent in a very large program. However, the continuation of its activities through such a statewide coverage should result in great improvement in fracture treatment. It has been difficult to secure a complete membership as some county units have been slow in naming their delegate. If this member was selected by each unit yearly at the time of election of officers a complete organization would be effected. Repre-

sentation without appropriation adds difficulty to the work. We respectfully hope that the work of this committee will merit some financial aid from the Society.

Donald C. Conzett, Chairman

In the absence of the chairman, Dr. Conzett, no action was taken.

President Myers: Committee on Military Affairs, Dr. Shane, secretary.

REPORT OF THE COMMITTEE ON MILITARY AFFAIRS

To the officers of the Iowa State Medical Society and the members of the House of Delegates:

Iowa physicians are justly proud of the important part taken and the enviable records attained by the members of the medical profession of the state of Iowa in the various armed conflicts in which our country has been involved in the past. You are all cognizant of the present world unrest. You also realize that it takes considerable time to instruct and train doctors from civil life so that they may become competent medical officers.

Therefore, your committee urges renewed and continued interest in military matters, and makes the following recommendations:

First, that the program committee place on the Thursday program of the next regular session a competent speaker on military medicine;

Second, that during the ensuing year, each county medical society devote one program to military affairs;

And third, that all members of the State Society endeavor to interest the younger members in the regular service, the National Guard, and the Reserve Corps.

E. M. MacEwen, Chairman
F. G. Murray, Vice President
R. S. Shane, Secretary

Dr. R. S. Shane: I *move* the adoption of the report in the handbook.

The motion was regularly seconded, put to a vote and carried.

President Myers: Report of the Committee on Public Relations, Dr. Brock, chairman.

REPORT OF COMMITTEE ON PUBLIC RELATIONS

The Committee on Public Relations has been inactive during 1937, but plans to take a more active part in Society activities during 1938.

Walter R. Brock, Chairman

Dr. W. R. Brock: The Committee on Public Relations has done very little or nothing up to the present time. Nevertheless, I wish to say that tomorrow our Committee will meet with the Woman's Auxiliary, which is as much interested in the welfare of our people as we are. We will have a symposium upon public relations given by several eminent women, and we will hold an open discussion of these papers. I hope

that we can be of some assistance to the profession in the future. I move the adoption of this report.

The motion was regularly seconded, put to a vote and carried.

President Myers: Report of the Committee on Scientific Exhibits, Dr. McNamara, chairman.

REPORT OF COMMITTEE ON SCIENTIFIC EXHIBITS

The scientific exhibits arranged at the Sioux City session were on a par with those of previous years. While all the exhibits were worthy of considerable study, a few deserved special mention. Those arranged by the Sioux City members were unusually valuable because of the character of the exhibits and because of the time and effort put into arranging the material. The results were very effective and the exhibits graphically illustrated the progressiveness of the men concerned. Another exhibit that attracted much favorable attention was that of Dr. John A. Thorson which emphasized the general practitioner's part in the diagnosis and treatment of squint.

One exhibit from the department of obstetrics and gynecology of the State University of Iowa, College of Medicine, on the diagnosis and treatment of trichomona vaginalis, and another on the histology of the temporal bone from the department of otolaryngology, were also of great scientific value. Finally, the exhibits of the Iowa State Department of Health which showed the prevalence of several of the infectious diseases in each county in Iowa, were graphic evidence of the varied effectiveness of control measures in the different counties.

Another feature of the Sioux City session was the public meeting on cancer which was attended by about 500 men and women. This meeting, which was an experiment in lay education, was developed by Dr. William Jepson, and proved very successful. Before and after the lectures on cancer, most of the scientific exhibits were open to the public. We believe the exhibits made a profound impression upon the visitors, and undoubtedly many obtained a better knowledge of the real significance of the work of the Iowa State Medical Society. Because of the educational programs against cancer and syphilis, the exhibits of the American Society for the Control of Cancer and of the American Medical Association were of the greatest interest to the public, but all received a great deal of study. Your committee

believes that such public meetings in conjunction with the annual session should be of great value in "driving home" to the public some of the lessons in regard to health which are carried on in Iowa by various agencies throughout the year. We recommend that whenever possible similar meetings, open to the public, should be organized in conjunction with the annual session.

In conclusion, the committee desires to express its appreciation to the members of the Woodbury County Medical Society who aided so greatly in arranging the exhibits, and to all the exhibitors for their co-operation in making this phase of the session the success it proved to be.

F. P. McNamara, Chairman
Frederick H. Lamb
Allen C. Starry

Dr. F. P. McNamara: Mr. President, I move that the report as printed in the handbook be approved.

The motion was seconded, put to a vote and carried.

President Myers: Report of the Woman's Auxiliary Advisory Committee, Dr. Hickenlooper, Chairman.

WOMAN'S AUXILIARY ADVISORY COMMITTEE

The Woman's Auxiliary Advisory Committee met with the state officers of the Woman's Auxiliary September 10, at the Wakonda Club in Des Moines. Mrs. Augustus S. Keck of Altoona, Pennsylvania, national president of the Woman's Auxiliary to the American Medical Association, gave a very interesting talk in which she cited many valuable services rendered by the Auxiliary in different states in promoting the welfare of organized medicine.

At the business session of this meeting, the mailing to each member of a reprint of the Woman's Auxiliary page which appears in the *Journal* each month was discussed, and it was decided that this action would be very helpful. It was also recommended that the Advisory Board ask the State Medical Society for a grant of not more than \$50.00 to help defray expenses incurred in connection with the annual meeting. Both of these requests were promptly approved by the trustees.

C. B. Hickenlooper, Chairman

In the absence of the chairman, no action was taken.

President Myers: Now we come to the reports of committees of the Council. First is the Speakers Bureau Committee, Dr. Glomset, chairman.

Reports of Committees of the Council

REPORT OF THE SPEAKERS BUREAU COMMITTEE

To Members of the Council:

The year 1937 showed a pronounced increase in Speakers Bureau activities. Due to a comparatively mild winter, our accomplishments were many and our endeavors greatly enhanced.

In the spring of 1937, we conducted four regular extension courses in general therapeutics. These courses were presented in Ames, Fort Dodge, Mason City and Clinton, with enrollments of sixty-one, sixty-seven, fifty-seven, and forty-four respectively.

Through the Social Security funds again allotted to us, we were enabled to present six "refresher" courses in obstetrics and pediatrics. In Osceola,

thirty-seven physicians enrolled; in Centerville, twenty-nine; in Keokuk, sixty-five; in Panora, forty-seven; in Denison, forty-four, and in Red Oak, forty-six. The speakers on the "refresher" courses were physicians practicing in the state, and some members of the faculty of the College of Medicine at Iowa City. We are greatly indebted to these men for the excellent lectures they gave to their colleagues.

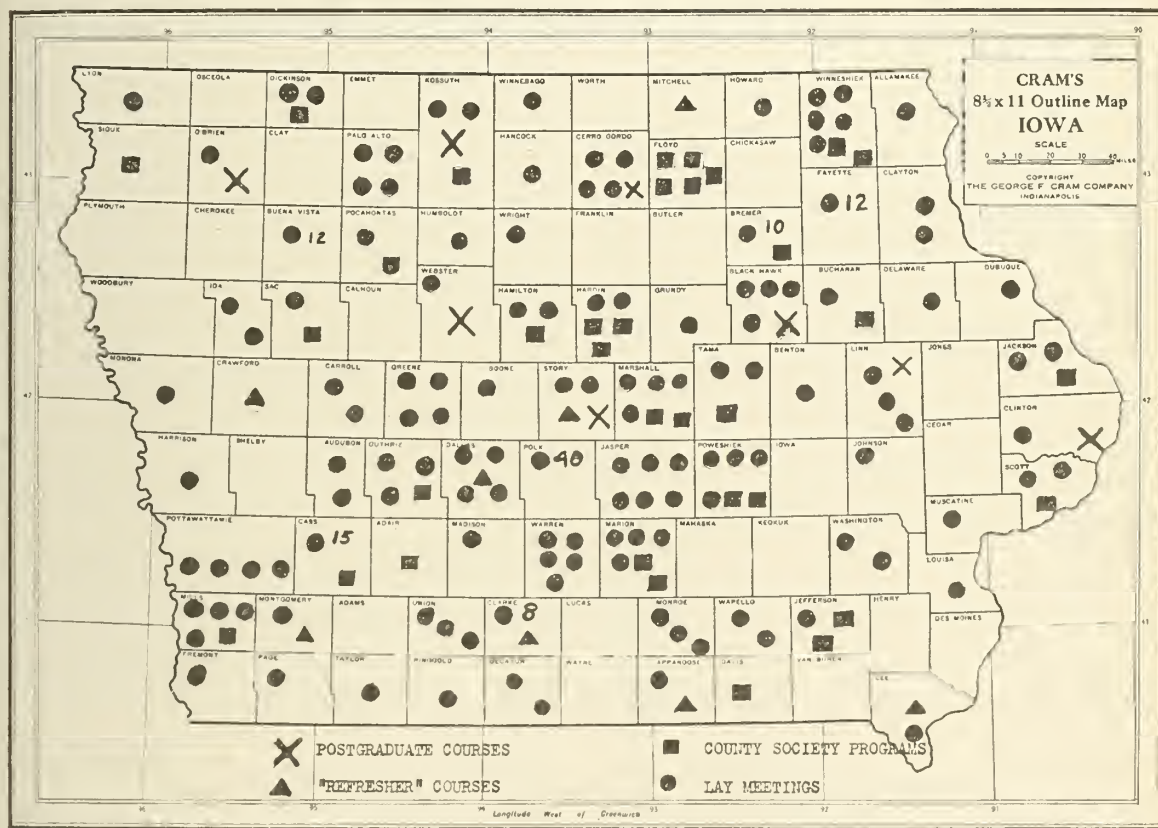
In the fall, four more postgraduate courses were conducted. A course on cancer was given at Cedar Rapids, where twenty-five physicians attended the lectures. Two courses in endocrinology and metabolism were given in Sheldon and Waterloo, with enrollments of forty-one and sixty-seven respectively. This course seemed to be very popular. It touched

thirty-four, or almost one-third of the entire membership.

Programs were planned for thirty-five county society meetings, in which thirty physicians participated.

During the course of the year two hundred and twenty talks were given to various lay organizations throughout the state, a new high for this phase of our work. Of these, thirty-eight were given to Parent-Teacher Associations, fifty-five to Women's Clubs, forty-eight to service clubs, fifty-five to colleges, and twenty-four to social service workers.

The talks to college groups proved to be so popular in 1936 that the work was expanded in 1937. Drake University in Des Moines, Luther College at De-



a field in which many practitioners felt the need for information concerning the new developments in knowledge, and the comment was made that it was one of the best courses ever presented by the Bureau. The speakers were clinicians from Chicago, Madison, Rochester, and St. Louis. A course in general therapeutics was given at Algona, where twenty-nine physicians attended the lectures.

Two "refresher" courses were given in November, one at Osage with an enrollment of twenty-five, and one at Nevada, attended by the Boone and Story County Medical Societies.

The total number of physicians attending the courses during the year was seven hundred and

corah, Wartburg College in Waverly, Buena Vista College in Storm Lake asked for series of lectures, and these were arranged and presented during the year.

Fifty-two radio talks were given. These were prepared by physicians in all parts of the state. In October, our broadcast hour was changed to Wednesdays at four o'clock, and was made part of a series of programs broadcast simultaneously from WOI at Ames and WSUI at Iowa City. This has given us a larger coverage of the state, and we are very grateful to the officials of both stations for their kindness in making this possible. Requests received for copies of the talks averaged ten per

talk, and came from all of the mid-western states.

As is our custom, we again cooperated with the Woman's Auxiliary to the Iowa State Medical Society in sponsoring the annual health essay contest. The subject chosen was "The Importance of Good Vision." Many excellent essays were received, and the committee felt that all those students who had entered had benefited from the contest through a better understanding of their eyesight and its value.

In 1936 the Speakers Bureau inaugurated a weekly news release on health. Possibly eight releases were mailed to newspapers in the state during 1936. The work continued during 1937, and at the present time over one hundred newspapers are taking the service weekly. A clipping service gives us accurate figures on how many newspapers use the articles, and guides us in our choice of subject matter. We believe this is a worthwhile activity, and one which should be continued.

A summary of the activities of the bureau is shown by the accompanying map, which tells graphically what sections of the state are availing themselves of the services of the bureau. On the whole, most of the state has been covered in some way.

The financial report of the bureau is given, first for the year 1937, and then for the entire period of its existence.

Account for 1937	
Income	
Receipts from postgraduate courses.....	\$ 2,985.29
Travel expense refund.....	56.95
Received from dues.....	1,800.00
TOTAL	\$ 4,842.24
Expenditures	
Salaries	\$ 1,514.00
Travel expense for speakers.....	932.90
Postgraduate courses travel expense.....	1,954.77
Radio Talks	69.45
Cancer Talks	72.57
Stationery, printing, telephone, etc.....	1,047.57
Miscellaneous	150.27
TOTAL	\$ 5,741.55
Deficit for 1937.....	899.31
Total Receipts 1930 through 1937	
1930	\$ 2,780.00
1931	3,939.34
1932	2,805.58
1933	4,850.70
1934	5,550.90
1935	6,351.97
1936	4,931.03
1937	4,842.24
TOTAL	\$36,051.76
Total Disbursements 1930 through 1937	
1930	\$ 306.26
1931	3,949.97
1932	5,855.70
1933	3,744.06
1934	4,316.30
1935	5,435.56
1936	4,360.13
1937	5,741.55
TOTAL	\$33,709.53

These figures can only tell the money expended. They do not picture the time and energy which has been given by the physicians in the state in making the work possible, nor do they measure the value of that labor. We deal with intangibles in this committee, but we all feel that the work has a very great value, and that it must go on.

Daniel J. Glomset, Chairman
 Harold L. Brereton
 Earl B. Bush
 James Dunn
 Lester C. Kern
 Sydney D. Maiden

In the absence of the chairman, no action was taken.

President Myers: Report of the Cancer Committee, Dr. McNamara, chairman.

REPORT OF THE CANCER COMMITTEE

During 1937 the Executive Cancer Committee continued its work along the same lines as in 1936. This consisted of first, the completion of the cancer manual for distribution to the medical profession, internes and medical students in Iowa; second, the organization of the Iowa Division of the Women's Field Army; and third, active aid in promoting its lay educational program.

At the time this report is being written (March 1) the manual is ready for the printer. At the meeting of the Council held October 27, 1937, it was voted to have the Trustees consider the allocation of funds for the publication and distribution of the manual. At a meeting held later in the year, the Trustees denied funds for this purpose. Therefore, the committee was compelled to seek the necessary funds elsewhere, and we are happy to report that a friendly but anonymous source was found. It is expected that the manual will be distributed by April 1. The committee firmly believes the rank and file of the Iowa State Medical Society will be glad to help defray the expense of publication of the manual by contributing \$1.00 each. Nevertheless it is the sense of the Executive Committee that educational projects of this sort, developed and organized by regularly appointed committees of the State Society, and approved by the Council, should be financed by the Iowa State Medical Society.

In regard to the second activity, we are glad to state that the organization of the district and county units in some of the councilor districts was completed and that the 1937 enlistment campaign of the Women's Field Army was successful. In about one-half the state, the campaign failed as is shown in the accompanying table:

First District:	
Clayton County	\$117.25
Howard County	3.00
	\$120.25
Second District:	
Franklin County	\$ 6.00
Hancock County	7.00
Humboldt County	51.50
Kossuth County	124.79
Worth County	27.00
	\$216.29
Third District:	
Clay County	\$ 44.87
Pocahontas County	9.00
Osceola County	16.83
Lyon County	108.00
Sioux County	60.50
Palo Alto County.....	10.00
	\$249.20

Fourth District:	
Cherokee County	\$ 14.00
Woodbury County	334.90
Ida County	30.00
Sac County	47.00
Monona County	44.00
Buena Vista County	99.75
Plymouth County	19.00
	<hr/>
	\$588.65

Fifth District:	
Webster County	\$ 36.00
Calhoun County	1.00
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	\$ 37.00

Sixth District:	
Black Hawk County	\$ 83.00
Jasper County	5.00
Marshall County	12.00
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	\$100.00

Seventh District:	
Buchanan County	\$ 36.50
Cedar County	62.00
Dubuque County	630.00
Jackson County	41.00
Johnson County	200.00
Jones County	114.50
Linn County	565.00
Delaware County	34.00
Clinton County	44.00
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	\$1,727.00

Eighth District:	
Washington County	\$114.14
Henry County	7.00
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	\$121.14

Ninth District:
No report

Tenth District:	
Clarke County	\$ 8.00
Adair County	16.00
Madison County	37.00
Union County	122.30
Warren County	24.00
Ringgold County	32.35
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	\$239.65

Eleventh District:	
Audubon County	\$ 7.00
Cass County	127.00
Fremont County	55.00
Harrison County	54.25
Mills County	279.60
Montgomery County	15.83
Page County	15.60
Pottawattamie County	540.55
Shelby County	50.70
	<hr/>
	\$1,145.53

Grand Total \$4,544.71

Since the campaign ended an additional sum of \$234.08 has been received from various parts of the state. Thus the total amount collected was \$4,778.79. Thirty per cent (\$1,433.64) of the total was sent to the National Society.

Following is a financial statement up to February 1, 1938:

Balance on hand.....	\$3,345.16
Disbursements	
1937 Campaign expense.....	\$ 62.79
1937 July to October expense.....	189.12
Pamphlets—"Cancer and Its Cure".....	13.50
Pamphlets—"Facts About Cancer".....	219.00
Pamphlets—"Danger Signals".....	5.50
December 15th meeting—Des Moines.....	16.90
Office Expense—October to February.....	74.94
Traveling Expense to February.....	130.77
Vice Commander's Expense to February.....	75.66
Advance to Districts.....	275.00
January letter to contributors.....	52.00
Stationery	54.70
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Total disbursements	1,169.88
Cash with Treasurer.....	\$2,175.28

While there were several factors that hindered the organization of the Women's Field Army, we believe the most important one was lack of interest if not frank opposition, on the part of some members of the medical profession. Certainly the figures in the table show that the women in some districts were keenly interested in the development of a plan to control cancer more effectively. Indeed, the interest of the women, when properly approached and encouraged, was a most hopeful sign of the ultimate success of the campaign in all the counties of Iowa.

Recognizing that possibly some of the failures of 1937 were due to inadequate knowledge of the aims and purposes of the Women's Field Army, your committee has endeavored to appear before county medical societies whenever possible, and tell the objectives of the organization. Letters and literature concerning the Women's Field Army were sent to all councilors, deputy councilors and county cancer chairmen. We hope that in this way a greater interest and a more cooperative spirit on the part of the general medical profession has been aroused in those districts where the campaign failed last year.

At this point it is well to reaffirm the conviction of the executive committee that the Women's Field Army educational program is the most effective method yet proposed to lower the ever increasing cancer mortality rate in Iowa. It is based upon the fact that with our present knowledge of cancer, a cure depends upon early correct diagnosis and effective eradication. Obviously, this demands that patients shall seek early rather than late medical advice. To attain this desirable end, it is equally obvious that the laity must be taught the significance of the various early signs that may indicate cancer. Ignorance and a morbid fear of cancer must be replaced by the dissemination of proved conservative facts now in the possession of the medical profession.

The tangible accomplishments of the Iowa Division of the Women's Field Army may be listed as follows:

1. Probably one hundred fifty to two hundred public lectures on cancer were given in 1937.

2. The scientific exhibits at the Sioux City session were opened to the public in conjunction with the public meeting on cancer. Between four and five hundred persons attended. The success of this meet-

ing, which was arranged by Dr. William Jepson, was aided greatly by the cooperation of the members of the Woodbury County Medical Society and the Sioux City unit of the Women's Field Army under the leadership of Miss Witke, vice commander. A similar exhibit was also arranged for the annual meeting of the Iowa Federation of Women's Clubs, also held in Sioux City.

3. Approximately twenty small exhibits were held in conjunction with lectures before various women's organizations in various parts of the state.

4. An exhibit at the Iowa State Fair in conjunction with the general exhibits of the Iowa State Department of Health was studied by between 25,000 and 30,000 persons.

5. The chairman of the committee and Dr. H. Dabney Kerr, radiologist of the State University of Iowa, College of Medicine, gave special lectures on the cancer problem before the annual convention of the Iowa Association of Registered Nurses. This meeting, which was held in Dubuque, was attended by four hundred nurses. There were four other meetings with equally large audiences in other cities.

6. Approximately 75,000 pieces of literature on cancer were distributed during the year.

7. It is estimated that the program reached between 150,000 and 200,000 adults in Iowa. The enthusiasm of the Iowa editors in the program was a notable and encouraging feature of the campaign.

8. Eighteen hundred inches of Iowa newspaper space is known to have been devoted to cancer articles. Probably much more space was utilized but not reported.

9. Many physicians have reported that patients are acting upon the knowledge of cancer, as well as health in general, that they have acquired, and are seeking, early advice for symptoms suggestive of cancer.

We believe the full effectiveness of the cancer campaign in Iowa will be felt only when \$25,000.00 is annually available. In its first year, under very unusual difficulties, Mrs. C. W. McLaughlin, Iowa Commander, Women's Field Army, obtained 4,778 enlistments. This year, with the better organization that has been developed, Mrs. M. C. Hennessy, the present Commander, hopes the enlistments will reach twenty thousand. This will require the full cooperation of both lay and professional groups. The committee is deeply grateful to both Mrs. McLaughlin and Mrs. Hennessy, as well as to the hundreds of Iowa women, who gave so freely of their time and efforts in the development of the program. Our appreciation is also extended to the many prominent men and women who accepted memberships in the advisory committee of the Iowa Division. Finally, we have only words of praise for the many members of the Iowa State Medical Society who gave of their time and talents in carrying on the lecture work throughout the year. The State Department of Health has our especial gratitude for printing 40,000 copies of the pamphlet on cancer, and for giving space in the scientific exhibits at the Iowa State Fair. Dr. J. H. Randall of the State University of Iowa,

College of Medicine, is also to be commended for preparing the "Facts on Cancer" pamphlet.

In conclusion it can be said that cancer is everyone's enemy—we ask the cooperation of all in the crusade against it.

F. P. McNamara, Chairman
A. W. Erskine
E. D. Plass

Dr. McNamara: There is one addition to the report as printed in the handbook, and that is with regard to the cancer manual. There were 5,000 copies printed, and I believe everybody in the Iowa State Medical Society received a copy. If not, we will see that you are supplied if you will communicate with us. We were forced to obtain funds to pay for the cost of printing. The Committee assumed that burden, but it did feel that the rank and file of the Iowa State Medical Society would be willing to pay one dollar for the book. This assumption was not borne out in actual result. I may say that the cost of the entire project was \$1,035.44. That included mailing, envelopes and printing. We received back from the membership of the society \$238.50, so that the Committee owes \$795.94. I wish the House of Delegates would call the attention of the various members of the State Society to that very important fact. Otherwise, I *move* that the report as printed in the handbook be approved.

Dr. Woods: Mr. President, I received this manual, and I noticed the request that we send one dollar; I understood that the Council had approved this thing. I wrote Dr. McNamara and I found that, while it had been approved by the Council, it had not been approved by the Board of Trustees. Now, are we as members of this profession going to let this Committee go down into its pockets for \$700? I think, after the work that has been done by this Committee, that Dr. McNamara is altogether too modest and too generous; if he has received only \$200, I wonder what will happen to the other \$700? I do not feel that the Committee should bear this expense. It seems to me this House of Delegates should take some action to reimburse the Committee. I would *move*, Mr. President, that this Committee be reimbursed to the extent that it is in debt.

The motion was regularly seconded.

Dr. Erskine: I *move* that the motion be laid on the table.

The motion was regularly seconded.

President Myers: You have heard the immediately pending motion that the matter be laid on the table. That is not a debatable question. All in favor say "aye"; contrary-minded "no." *The motion is lost.*

Are there any remarks on Dr. Woods' motion?

Dr. Erskine: I rise to a point of order, Mr. President. The House has no authority to vote reimbursement to any Committee. The constitution makes no provision for the House of Delegates to spend money.

Dr. Woods: I rise to a point of order, Mr. President, and make my motion read that the House of Delegates instruct the Board of Trustees to reimburse this Committee.

Dr. Hanna: I second the motion.

Dr. Erskine: I *move* that that motion be laid on the table.

President Myers: Is there a second to Dr. Erskine's motion? It dies aborning. The immediately pending motion is Dr. Woods' amendment. State it, please.

Dr. Woods: I *move*, Mr. President, that the Board of Trustees be instructed to reimburse this Committee to the extent of its indebtedness.

President Myers: You have heard the amendment to the motion, that the Board of Trustees be instructed to reimburse this Cancer Committee.

Dr. Erskine: I wish to say one word against the motion. The Committee was fully aware of the reasons why the Trustees failed to appropriate the \$1,000 that this manual cost, and in spite of that, it is true that the Committee did, of its own volition, publish the handbook. The Trustees had several very valid reasons, I think, for failing to appropriate the money. I think if this motion were passed it would be a reflection upon the business sagacity of the Trustees. Therefore, I am anxious that it not be passed. The Committee is perfectly willing to take its chances on collecting the other \$750. If not, I personally know of a private source, a layman, not a medical man, who will pay whatever deficit there may be on the manual, because he himself is interested in the cause of educating the physicians of Iowa in cancer.

Dr. Hanna: May I ask the Trustees to give us the reasons why this request was denied?

President Myers: Members of the House, you cannot take action on the amendment to the motion made by Dr. Woods. I will read the section of the By-Laws: "All resolutions or recommendations of the House of Delegates pertaining to the expenditure of money must be approved by the Board of Trustees before the same shall become effective." The motion therefore is out of order, and we will consider the original motion of Dr. Woods.

Dr. Woods: Mr. President, there has been considerable said about reflection on the Board of Trustees, but I think if the House of Delegates permits the Cancer Committee to shoulder this expense it is a reflection on the House of Delegates.

Dr. Ellyson: I believe that the Council, in passing the buck on to the Board of Trustees, figured the price for publishing this book at somewhere between \$1,500 and \$1,900. I may be mistaken but I think those figures explain more fully the action of the Board of Trustees than the \$1,000 figure. I think the manual was published at a figure far lower than the original estimates. We should stand by our Board of Trustees in its action to protect our funds, and we should not establish a precedent of publishing books for every disease that comes along. On the other hand, I think any man who cannot pay one dollar for that publication, considering the amount of work those men have put into it, is getting by rather cheaply.

Dr. Marker: The question was brought up here

about reflecting upon the Trustees. I do not want you people to feel that the Trustees are at all thin-skinned. The proposition which was put up to us was "appropriate \$1,500," without any definite idea as to what the manual was to cost. I do not believe we were even asked for a specific amount. We were told it would be somewhere around \$1,500. At the same time, the Trustees were being approached by other committees wanting to publish handbooks on subjects just as important, perhaps, to the welfare of the state of Iowa as cancer is. It is true that the Committee had put a lot of time in on it. We asked the members to come before us with specific recommendations. The next word we got was that they had found someone else to take care of it.

I do not know what we would have done if we had had a specific request as to the amount of money and as to what the Committee wanted to publish, but I do say that indefinite requests for money cannot be considered if we are properly to guard the funds which the members are contributing every year.

There followed an extended discussion of the subject, the general consensus being that the committee had done a most praiseworthy task in formulating this booklet, and that the manual was distinctly worthwhile. No action was taken and further discussion was postponed due to the lateness of the hour.

President Myers: We have two distinguished guests with us this afternoon. May I introduce Dr. J. R. Neal, past president of the Illinois State Medical Society.

Dr. Neal: Gentlemen, Illinois sends its greetings to the successful meeting you are having here. We meet over in Springfield in our state next week, and if any of you can come across the river we assure you of a good meeting and a warm welcome. Thank you very much.

President Myers: I have pleasure in presenting Dr. Leland of the American Medical Association, Committee on Medical Economics.

Dr. R. G. Leland: Mr. President and Members of the House of Delegates: I suspect we shall be seeing many of you in San Francisco in about a month. Perhaps one of the most important questions which is before the American medical profession today is the question of the study of medical care to be made by all the state and county medical societies in the United States. Your secretary has been in the office of the American Medical Association and has discussed this question with us. I have had a conference with the Medical Economics Committee today, and spoke before the secretaries' meeting. At the proper time your committee and your officers will present to the entire membership of the medical society here in Iowa a request for participation in this study. I believe, knowing Iowa as I do, having seen many of you in your own home towns, we shall be able to expect from Iowa a report equally as good as any other state in the Union.

President Myers: We have a few memorials and communications which I hope you will stay to hear read.

Dr. Bierring: In the report of the Cancer Committee, my name is mentioned as having printed 40,000 copies of a pamphlet. That was a regular bulletin of the State Department of Health, and the State Department of Health should have the credit. Will you, therefore, please correct the report?

President Myers: It is so ordered. Now I will ask the Secretary to read the communications.

Secretary Parker: We have a telegram from Dr. Goodrich, president of the New York State Medical Society inviting the delegates from the Iowa State Medical Society to vote for New York for the next annual session of the American Medical Association. I will refer that to our delegates. We have a wire from Dr. Davis, president of the Nebraska State Medical Society, sending his best wishes; one from our past president, Dr. Harkness of Davenport, expressing regret at his inability to attend the luncheon for the past presidents; and one from Dr. Camp, secretary of the Illinois State Medical Society, regretting his absence at our meeting. I visited with him just a few weeks ago, and he said he would be here. I wish this body would authorize me to acknowledge those telegrams.

President Myers: I will entertain such a motion.

Dr. Hanna: I *move* that they be acknowledged.

The motion was regularly seconded, put to a vote and carried.

President Myers: We will now take up new business.

Dr. Moore: The following resolution is from the Committee on Public Policy and Legislation:

"The Committee on Public Policy and Legislation recommends that the House of Delegates of the Iowa State Medical Society go on record as favoring the enactment of legislation which will set definite clinical and laboratory standards for the determination of alcoholic intoxication or drunkenness; that a committee be appointed from the Society consisting of a blood chemist, a clinician and a member of the Council, to consult and function with the Legislative Committee and the Medicolegal Committee in the promotion of such legislation."

We offer this resolution, in the belief that it will bring to the attention of other organizations interested in such legislation, the knowledge that the Iowa State Medical Society is aware of some of the difficult problems involved and wishes to contribute to the best of its ability, to the enactment of the best laws we may be able to get. At the same time, it does not put upon us the responsibility for having that legislation written, presented and lobbied through the legislature. It leaves the problem entirely to any organization that is interested in it, and merely declares our interest in the particular portion of such legislation as should be of special interest to the medical profession and which no other group of people is able to handle. I *move* its adoption.

The motion was regularly seconded, put to a vote and carried.

President Myers: Is there any other new business?

Dr. Moore: I have another item which I would like to present, not from the Committee on Public Policy and Legislation but as a member of this House of Delegates. It has to do with the policy of the Committee on Foods of the American Medical Association. I do not know whether members of the House generally have been running into criticism from the dairy interests because of the policy of the Committee on Foods. I have encountered a large amount of it. To give you the picture, I want to read you a letter from the editor of *Wallaces' Farmer*. Before I read that letter I want to call your attention to the fact that the legislature of Iowa in about 1922 or 1923 enacted a statute which prohibited the sale of dairy products from which the cream had been removed and substitutes such as cocoanut oil had been added. Obviously that statute is in the interests of public health. Commercial interests have been so vigorous in this field that they have been pushing the sale of evaporated milk in which butter fat has been replaced with cocoanut oil, even in the face of the fact that it is illegal to do so in Iowa. Late last summer suit was brought against the Secretary of Agriculture of the state, with whom the enforcement of the pure food laws lies, asking an injunction which would prohibit the Secretary of Agriculture from enforcing the law which the legislature of Iowa had passed. That has been tried before a court in equity and the decision is pending. In the meantime, about two weeks ago, the Supreme Court of the United States handed down a decision confirming a federal statute which prohibits the interstate shipment of products of that kind, products which violate the pure food statute. The Committee on Foods of the American Medical Association has, in the past, given its acceptance to dairy products. For some reason the Committee on Foods has withdrawn its recognition and acceptance of dairy products. It undoubtedly had good reasons to do so, but, having withdrawn its acceptance of dairy products, (giving as a reason the protection afforded the public by pure food laws and state and federal enforcement officers, so that the acceptance no longer was necessary) it proceeded to give its acceptance to substitute products, in which other products have been used to replace butter fats, and synthetic vitamins offered to establish the vitamin content. I have heard a great deal of criticism of that action and have seen some editorials from dairy papers in Minnesota which have been exceedingly critical of the medical profession and the American Medical Association. With that background, I will read you this letter from the editor of *Wallaces' Farmer* which will complete the picture and give you his point of view:

"The physicians of Iowa, interested in greater use of dairy products in the diet, will be shocked to note that the manufacturers of butter substitutes are using the seal of acceptance of the American Medical Association to push the sale of these products, with the idea of replacing natural dairy products with these synthetic foods. Advertisements of these synthetic foods, with the seal of acceptance prominently displayed, are being used to divert consumers from

butter and other natural dairy products, and this campaign is further aided, no doubt unintentionally, by the fact that the American Medical Association does not put the seal of acceptance on butter. The competitors of butter can therefore point to the seal of acceptance on butter substitutes, and point to the fact that the American Medical Association has not similarly approved butter and can assist consumers to draw the inference that the physicians of America considered butter an inferior product.

"Note in the attached advertisements how one says: 'The doctor says there is no fresher, purer, more wholesome spread for bread than', and it is left blank there, but it might be Jelke or Good Luck or any other brand of oleomargarine which has a synthetic vitamin in it.

"And another, that is quoting from some of this advertising material, 'Why, Ruth, you are a doctor's wife, and you boast of serving margarine!' Another 'Doctors say there isn't a purer, more wholesome product.'

"Dairy farmers will be gratified and consumers will be aided if the physicians of Iowa were to assist to correct this unfortunate error on the part of the American Medical Association."

I believe there is some basis for their complaint. Here are clippings from the *Ladies' Home Journal* and *Good Housekeeping*, the *Pictorial Review*, and another from *Good Housekeeping*, on which their advertising is largely based upon acceptance by the Committee on Foods of the American Medical Association. I believe it would be a good policy and in the interest of the medical profession if the House of Delegates would voice a protest to be carried to the House of Delegates of the American Medical Association protesting the policy of the Committee on Foods of the American Medical Association. I doubt if the Committee fully realizes the reflection which comes back upon the practicing profession because of this type of advertising. I believe it would be good policy on the part of this House of Delegates to forward such a protest to the House of Delegates of the American Medical Association with reference to the refusal of the Committee on Foods to recognize or accept dairy products and, at the same time, give acceptance to the substitute products. Mr. President, I move that this House of Delegates voice such a protest.

The motion was seconded, put to a vote and carried.

Dr. Moore: Dr. Bernard left this resolution:

"That the House of Delegates of the Iowa State Medical Society recommend for favorable consideration of the Program Committee, the matter of acting as host to the Interprofessional Association in connection with a half-day program."

This merely expresses the approval of this House of Delegates that such a program be developed. It does not commit, necessarily, the Program Committee to that sort of thing. He referred to this in his report as the plan by which an interprofessional program would be given each year, but would be rotated

among the five state organizations, so that it would come into our program only once in five years.

Dr. Woodward: I move its adoption.

The motion was regularly seconded, put to a vote and carried.

President Myers: Any other communications?

Secretary Parker: Mr. Chairman, I wish to propose an amendment to the By-laws to be acted upon finally next Friday morning. The proposed amendment is to substitute for Section 8, Chapter VIII of the By-laws, a new Section 8, which refers to the Medicolegal Committee. This new Section 8 has been prepared by very competent legal advice. I will read it:

"The Medicolegal Committee shall consist of three members, all of whom shall serve without pay. The term of service of each member shall be three years, provided that in the original organization of this Committee the service shall be grouped by lot into three divisions with terms expiring in one, two and three years, respectively.

"It shall seek such organization as it sees fit, and adopt rules for its guidance, and for the guidance of the State Society in medicolegal matters. It shall be the duty of the members of this Committee, severally or collectively, to investigate all claims of malpractice against members, to prepare statistics showing so far as possible, the number and character of such claims, and to assist in any lawful or proper manner in the preparation of the defense against claims and suits for civil malpractice presented or brought against any member of this Society in good standing, provided such member shall request the aid of the Committee. For this purpose it may incur such expense and cause such disbursements to be made as the Committee and the Board of Trustees may approve."

I move, Mr. President, that this constitute the first reading of this proposed amendment to the By-laws.

The motion was seconded, put to a vote and carried.

President Myers: The delegates from their separate districts will meet in caucus immediately after adjournment and report to the Secretary when they have taken action.

Secretary Parker: I wish to announce that the House of Delegates today consisted of: officers, 12; delegates, 55; and alternates, 15, making a total of 82.

Upon motion regularly made and seconded, the meeting recessed at six-five o'clock to reconvene at seven-thirty on Friday morning.

Friday Morning, May 13, 1938

The second session of the House of Delegates convened at seven thirty-five o'clock, President Myers presiding.

President Myers: Will the House please come to order? The first order of business will be the roll call.

The roll call consisted of delegates, 38; alternates, 10; and officers, 13, making a total registration of 61 delegates and officers present.

President Myers: Will the Secretary please read the minutes of the last session.

Secretary Parker read an abstract of the proceedings of the Wednesday afternoon session.

President Myers: Are there any corrections to these minutes as read? If there are no corrections, they will stand approved as read. The next is the report of the Committee on Nominations.

Secretary Parker: With the consent of the Secretary of the Committee, I will read its report.

The Nominating Committee convened in Parlor A of the Hotel Fort Des Moines at nine a. m., Thursday, May 12, 1938, and organized, with Dr. Brock of Sheldon as chairman and Dr. Hanna of Burlington as secretary. Those present were:

First Councilor District, J. W. Thornton of Lansing; Second Councilor District, H. D. Fallows of Mason City; Third Councilor District, W. R. Brock of Sheldon; Fourth Councilor District, H. E. Farnsworth of Storm Lake; Fifth Councilor District, Bush Houston of Nevada; Sixth Councilor District, E. E. Magee of Waterloo; Seventh Councilor District, H. A. Householder of Winthrop; Eighth Councilor District, J. T. Hanna of Burlington; Ninth Councilor District, J. C. Donahue of Centerville; Tenth Councilor District, J. F. Loosbrock of Lacona; Eleventh Councilor District, F. E. Bellinger of Council Bluffs.

The following names were placed before the committee for the office of president elect:

Erwin J. Gottsch of Shenandoah, nominated by Dr. Loosbrock; Felix A. Hennessy of Calmar, nominated by Dr. Bellinger; F. M. Tombaugh of Burlington, nominated by Dr. Hanna.

It was moved by Dr. Donahue, seconded by Dr. Bellinger, that the above three names be submitted to the House of Delegates as nominees for president elect. Motion carried unanimously.

For first vice president, W. C. Goenne of Davenport was nominated by Dr. Hanna, and was accepted unanimously.

For second vice president, G. C. Albright of Iowa City was nominated by Dr. Farnsworth, and was accepted unanimously.

For trustee to succeed Dr. Parsons, the name of Lee R. Woodward of Mason City was presented by Dr. Donahue and accepted unanimously.

For councilor of the second district, the name of C. H. Cretzmeyer of Algona was presented by Dr. Fallows, and accepted unanimously.

For councilor of the seventh district, the name of F. P. McNamara of Dubuque was presented by Dr. Householder, and accepted unanimously.

The names of Dr. T. F. Thornton and Dr. V. L. Treynor were presented by Dr. Bellinger as delegates to the American Medical Association, and were unanimously accepted.

The name of Dr. John H. Peck of Oakdale was submitted by Dr. Bellinger as an alternate to the American Medical Association, and the name of Dr. Arthur D. Woods of State Center was presented for the same position by Dr. Magee. Both were unanimously accepted.

It was moved by Dr. Bellinger, seconded by Dr. Donahue, that the Committee recommend to the House of Delegates that the 1939 session of the Iowa State Medical Society be held in Des Moines. Motion carried unanimously.

It was moved by Dr. Donahue and seconded by Dr. Farnsworth that the Nominating Committee recommend to the Board of Trustees that the State Society defray all expenses incident to the state meetings at all future sessions. Motion carried.

There being no further business, the Committee adjourned at ten-twenty a. m. to be reconvened, if necessary, at the call of the Chairman.

J. T. Hanna, Secretary

President Myers: Delegates, you have heard the reading of the report of the Nominating Committee. What do you wish to do with the report?

Dr. Hanna: I *move* the report be accepted.

The motion was regularly seconded, put to a vote and carried.

President Myers: We will now proceed to the election of officers.

Secretary Parker announced the following results of the ballot for president: Dr. Gottsch, 5; Dr. Hennessy, 44; Dr. Tombaugh, 17, a total of 66 votes.

President Myers: Dr. Hennessy, having received a majority of the votes, is duly selected as president elect.

Dr. Hanna: Mr. President, I *move* that Dr. Hennessy's election be made unanimous.

The motion was regularly seconded, put to a vote and carried.

Dr. Suchomel: Mr. President, I *move* that the By-laws be suspended and that the Secretary be instructed to cast the unanimous vote of the House of Delegates for the remainder of the candidates as presented by the Nominating Committee.

The motion was seconded, put to a vote and carried.

President Myers: The Secretary having cast the ballot for the respective candidates, I declare them duly elected to their respective offices.

Dr. Suchomel: I *move* that the House of Delegates accept the recommendation of the Nominating Committee that Des Moines be the convention city for the 1939 session, at a time selected by the Executive Council, not to conflict with the meeting of the American Medical Association.

The motion was seconded, put to a vote and carried.

President Myers: Gentlemen, there is another section to the report of the Nominating Committee. I will read it to you in case you have forgotten it.

"It was moved by Dr. Donahue and seconded by Dr. Farnsworth that the Nominating Committee recommend to the Board of Trustees that the State Society defray all expenses incident to the state meetings at all future sessions. Motion carried."

Dr. Hanna: Mr. President, I will amplify that to this extent. It costs a local county society some money to entertain a state medical meeting, over and above what the State Society has contributed, although one of the trustees told me the Board has always granted whatever has been asked. I think

the Sioux City men spent six or eight hundred dollars in addition to what was granted by the State Society. We felt it would be well to take care of all the legitimate expense incident to the extension of the State Medical Society program. It is for the benefit of the State Society, and is contributed by all its members. We felt that it would be proper for the State Society to foot all those expenses.

Dr. Fay: Mr. President, I do not think any county society has asked for money and not received it. Dr. Sawyer received the amount he requested. He said that his own group wanted to entertain. I know the Board of Trustees has no objection whatever to paying any bill that is legitimate.

President Myers: I will consider a motion. What will you do with the recommendation?

Secretary Parker: Mr. President, I *move* that it be laid on the table.

The motion was regularly seconded, put to a vote and carried.

President Myers: The motion is carried and the recommendation is lost.

Dr. Hennessy: Having been named president elect, I hereby offer my resignation as Councilor of the First District.

Dr. Spilman: I *move* it be accepted.

The motion was regularly seconded, put to a vote and carried.

President Myers: This situation, as the Secretary suggested, necessitates an immediate meeting of the Nominating Committee to take care of this vacancy. I would suggest it meet now. We will proceed with the reports of committees. The first is the Committee on Constitution and By-laws, Dr. Henkin, chairman.

Dr. Farnsworth: I think we passed over the unfinished business. There was a matter which came up Wednesday that I would like to hear about or get some action on, and that is in regard to the Medical Protective Insurance Company refusing insurance to men when they become sixty-five years of age. I would like to have the House go on record with a resolution to the Medicolegal Committee that they protest this action on the part of the Medical Protective Company.

President Myers: With your permission, we will take that up under the heading of unfinished business. Then you may speak at greater length, if you wish. Is the Nominating Committee ready to report?

Dr. Hanna: The committee met in due form and moved and seconded the nomination of Dr. Leslie L. Carr of Clermont as councilor for the first district.

Dr. Fay: I *move* his election.

The motion was regularly seconded, put to a vote and carried.

Dr. Suchomel: I *move* the By-laws be suspended and the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Leslie L. Carr as councilor of the First District.

The motion was regularly seconded, put to a vote and carried.

President Myers: We will now have the report of the Committee on Constitution and By-laws.

Dr. Henkin: We should first like to consider the amendment proposed to Chapter IV, in which the Committee recommended:

"The House of Delegates shall elect a speaker of the House whose duties shall be to preside over that body. He may have the right to vote only when he is a duly elected delegate or officer of the Society as defined in the Constitution. The term of office of this speaker shall be three years.

"The Nominating Committee, as provided in the By-laws, shall include in its report of nominations of officers the names of three (3) members of the Society as candidates for speaker. A majority of votes cast in the House of Delegates shall be necessary for election.

"If, for any reason, the office of speaker becomes vacant before expiration of his term, the House of Delegates shall fill the vacancy at the next annual session. A speaker chosen under these conditions shall serve three years."

This proposal was amended by Dr. Hanna to read substantially that "the president elect shall be speaker of the House." The Constitution and By-laws Committee is very pleased to accept that interpretation of the creation of the office of the speaker of the House. I *move* that that amendment to the By-laws be accepted.

The motion was regularly seconded, put to a vote and carried.

Dr. Henkin: "Amend Chapter VI, Section 1, to make the first sentence read as follows: 'The president shall preside at all meetings of the Society and of the House of Delegates in the absence of the speaker of the House; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require.'"

Dr. Henkin: This is simply an enabling act to restate the duties of the president in view of the creation of the new office of speaker of the House. I *move* the adoption of this amendment.

The motion was seconded, put to a vote and carried.

Dr. Henkin: The proposed amendment to the Constitution making the Executive Council of the State Society an authorized committee to function in the interim between the sessions of the House of Delegates does not come up for vote until next year. That leaves the Society without any body which can legally function in matters of importance for the coming year, and the Committee wishes to move that the Executive Council's authority to act in lieu of the House of Delegates be extended for one year on the now existing basis.

Dr. Ellyson: I believe one change should be made. The provision last year, I believe, set the quorum of the body as the majority of the Council, whereas it should be a majority of the entire group. I so *move* an amendment to that effect.

President Myers: I will ask the Chairman to state this again so it will be clear to all of us.

Dr. Henkin: I move that the Executive Council as now constituted be authorized to act as the functioning body of the Society in the interim or up to the meeting of the House of Delegates in 1939, and that fourteen shall constitute a quorum.

The motion was seconded, put to a vote and carried.

Dr. Henkin: "Amend the By-laws, Chapter VI, Section 5, by adding a paragraph at the end of the present section: 'One trustee shall be elected from the area comprised of the first, second, third and fourth councilor districts, one from the area comprised of the fifth, sixth and seventh councilor districts, and one from the area comprised of the eighth, ninth, tenth and eleventh councilor districts. In the event that any elected trustee shall move from his own district to another as defined above, his office shall be vacated immediately and his successor appointed, or elected, as provided in the By-laws'."

I move the adoption of that amendment.

The motion was regularly seconded.

President Myers: Are there any remarks?

Dr. Suhomel: Mr. President, I would like to speak on this proposed amendment. I wonder how many of the delegates realize what is going to happen if you accept this amendment. Before making up my mind as to how I would react to this, I asked on what basis the division of the state was made, and I was informed, I feel reliably, that it was on the basis of medical population. I want to give you some figures as to how that medical population relationship is carried out. The proposal places the first, second, third and fourth councilor districts into one area. According to the Secretary's report, that area contains 576 physicians who are members of the Iowa State Medical Society, or 24.3 per cent. It places the fifth, sixth and seventh councilor districts into one area, in which there are 1,098 members, or 46.5 per cent. In the eighth, ninth, tenth and eleventh councilor districts there are 689 members, or 29.2 per cent. So, between the largest and smallest group we have a spread of 22.2 per cent; and a difference and a spread of 17.3 per cent in the second group. Since talking with members of this Committee, I was informed that the division now is being made on a geographic basis. The argument advanced is that a trustee should work as a councilor should or, perhaps, even as a delegate should work. It was pointed out that there are some delegates here who represent sixty members and some delegates who represent one county in which we have three members. I do not quite agree with that because the delegate is a county officer; he is representing his own county society. He is looking out for the welfare of his county society, if he is acting properly as a delegate. The same is true of a councilor. He is not a county officer; he is strictly not a state officer; he is a district officer. He is looking after the interests of his particular district. The trustee, on the other hand, is a state officer, and he is not representing any one district; he is representing the entire

state. Now it is only human to suppose that if a man is elected to any position on the basis of district or area, he is going to look after the interests of that area, rather than to consider the group as a whole. This is the Eighty-seventh Annual Session of the Iowa State Medical Society. We have managed fairly well with the three trustees who have been serving. They were not elected on a territorial basis. Mr. President, I move that this amendment be laid on the table.

The motion was regularly seconded, put to a vote and carried.

President Myers: Has the Medicolegal Committee anything further to report?

Secretary Parker: Mr. President, for the Medicolegal Committee I would like to take up a proposed amendment at the present time, substituting a new Section 8 for Section 8, Chapter VIII of the By-laws. The proposed amendment was read at your last session. I will read it now for the second reading and move its adoption.

"The Medicolegal Committee shall consist of three members, all of whom shall serve without pay. The term of service of each member shall be three years, provided that in the original organization of this Committee the service shall be grouped by lot into three divisions with terms expiring in one, two and three years, respectively.

"It shall seek such organization as it sees fit, and adopt rules for its guidance, and for the guidance of the State Society in medicolegal matters. It shall be the duty of the members of this Committee, severally or collectively, to investigate all claims of malpractice against members, to prepare statistics showing, so far as possible, the number and character of such claims, and to assist in any lawful or proper manner in the preparation of the defense against claims and suits for civil malpractice presented or brought against any member of this Society in good standing, provided such member shall request the aid of the Committee. For this purpose it may incur such expense and cause such disbursements to be made as the Committee and the Board of Trustees may approve."

I move the adoption of that amendment.

The motion was regularly seconded.

Dr. Erskine: May we have the original clause that this will replace?

President Myers: The Secretary will read the original clause.

Secretary Parker: "The Medicolegal Committee shall consist of three members, all of whom shall serve without pay. The term of service of each member shall be three years, provided that in the original organization of this committee the service shall be grouped by lot into three divisions with terms expiring in one, two and three years respectively. It shall be the duty of the members of this committee, severally or collectively, to investigate all claims of malpractice against members, to adjust such claims in accordance with equity where possible, and, if in their judgment an adjustment is impossible, or the claim is unjust, or the damage sought is excessive,

to lend such help, aid, and counsel as they may deem proper; but they shall not pay, or obligate the Society to pay, a judgment against any member; nor shall they pay or obligate the Society to pay for legal counsel not authorized by the Board of Trustees. This shall not apply to the cost of transcribing evidence in appealed cases.

"It shall effect such organization as it sees fit, and adopt rules for its guidance, and for the guidance of the State Society in medicolegal matters. It shall be empowered, with the approval of the Board of Trustees, to contract with such agents (attorney or other) as it may deem necessary. All bills for medicolegal defense, after approval by the committee and the Board of Trustees, shall be subject to warrants drawn on the general fund in the prescribed manner."

Dr. Woods: May we ask the Secretary to summarize what the proposed change would do, what change will take place, so that we can understand it better?

Secretary Parker: To answer the question briefly, it just simply takes away all question of the Iowa State Medical Society trying to engage or apparently engaging in the practice of law.

The motion was put to a vote and carried.

There followed a short discussion of legislative matters, with Dr. Moore and Dr. Bernard stressing the value of the interprofessional groups.

President Myers: The Committee on Public Policy and Legislation introduced a resolution in the Wednesday session recommending that a committee be appointed to work with the Legislative Committee in the promotion of legislation dealing with blood tests for drunkenness. I hereby name Dr. L. C. Kern, Dr. C. W. Ellyson, and Dr. Harold W. Morgan to serve as members. Is there any other new business?

Dr. Moore: I wish to offer a resolution setting forth the attitude of this House of Delegates in regard to the action of the Committee on Foods in withdrawing recognition to dairy products, and giving its seal of acceptance to dairy substitutes. This reads as follows:

"Whereas, One of the main objectives of the Committee on Foods of the American Medical Association is for improvement in the nature of advertising; and

"Whereas, The Committee on Foods has changed its policy and no longer considers and 'accepts' butter and other natural dairy products; and

"Whereas, Since discontinuing its acceptance of butter it has given its seal of acceptance to substitute products such as oleomargarine sold under trade names; and

"Whereas, This policy of the Committee on Foods has encouraged commercial firms to advertise such products as being accepted by the Committee on Foods, used by the medical profession and approved by the medical profession at large; and

"Whereas, This policy of the Committee is bringing much criticism on the profession at large from the dairy interests of the country; and

"Whereas, The medical profession has always ad-

vocated the liberal use of natural dairy products in the interest of public health; and

"Whereas, The profession at large does not want to be held responsible for a policy which discriminates against the natural dairy products in favor of the margarine class of products; therefore,

"Be It Resolved, by the House of Delegates of the American Medical Association, that the Committee on Foods be requested to change its policy in such manner as will eliminate this basis for unwarranted and undesirable criticism of the medical profession and of the American Medical Association; and

"Be It Resolved, That the delegates of the Iowa State Medical Society be instructed to present this action to the House of Delegates of the American Medical Association at the annual meeting in San Francisco in June, 1938."

I move this resolution be adopted.

The motion was seconded, put to a vote and carried.

Dr. Farnsworth: I move that the Medicolegal Committee have our support in protesting to the commercial insurance companies the action that has been taken in dropping our members when they reach the age of sixty-five years.

The motion was seconded, put to vote and carried.

President Myers: Dr. Erskine, are you ready with your committee appointments? If so, we will have them now.

Dr. Erskine: With the approval of the House of Delegates I have made the following appointments: Chairman, Section on Medicine—Ben G. Budge, Ames.

Chairman, Section on Surgery, Frank M. Keefe, Clinton.

Chairman, Section on Eye, Ear, Nose and Throat—Thomas R. Gittins, Sioux City.

COMMITTEE ON CONSTITUTION AND BY-LAWS	
John H. Henkin, Chairman.....	Sioux City
James C. Donahue.....	Centerville
Bush Houston.....	Nevada

COMMITTEE ON FINANCE	
Ernest C. McClure, Chairman.....	Bussey
H. A. Tolliver.....	Charles City
A. S. Bowers.....	Orient

COMMITTEE ON MEDICAL ECONOMICS	
Ernest E. Shaw, Chairman.....	Indianola
T. F. Thornton.....	Waterloo
A. C. Moerke.....	Burlington
M. C. Hennessy.....	Council Bluffs
H. M. Ivins.....	Cedar Rapids

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS	
Jack V. Treynor, Chairman.....	Council Bluffs
T. F. Hersch.....	Cedar Rapids
J. E. Brinkman.....	Waterloo

MEDICOLEGAL COMMITTEE	
Frank A. Ely, Des Moines, Chairman.....	1941
George C. Albright, Iowa City.....	1939
Corwin S. Cornell, Knoxville.....	1940

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Fred Moore, Chairman.....	Des Moines
R. D. Bernard.....	Clarion
L. A. Taylor.....	Ottumwa
A. W. Erskine.....	Cedar Rapids
Robert L. Parker.....	Des Moines

BALDRIDGE-BEYE MEMORIAL COMMITTEE

Julius S. Weingart, Chairman.....	Des Moines
Emerson B. Dawson.....	Fort Dodge
Herbert W. Rathe.....	Waverly

CHILD HEALTH AND PROTECTION COMMITTEE

R. H. McBride, Chairman.....	Sioux City
E. D. Plass.....	Iowa City
H. E. Farnsworth.....	Storm Lake
Lee F. Hill.....	Des Moines
Howard A. Weis.....	Davenport
C. P. Phillips.....	Muscataine
Roland Stahr.....	Fort Dodge

FRACTURE COMMITTEE

Donald C. Conzett, Chairman.....	Dubuque
Wm. G. Bessmer.....	Davenport
Karl R. Werndorff.....	Council Bluffs
F. L. Knowles.....	Fort Dodge
Arch F. O'Donoghue.....	Sioux City
V. A. Ruth.....	Des Moines
W. E. Wolcott.....	Des Moines

HISTORICAL COMMITTEE

Walter L. Bierring, Chairman.....	Des Moines
J. T. McClintock.....	Iowa City
T. B. Throckmorton.....	Des Moines
T. U. McManus.....	Waterloo
Frank M. Fuller.....	Keokuk
Wm. Jepson.....	Sioux City

MEDICAL LIBRARY COMMITTEE

Jeannette Dean-Throckmorton, Chairman.....	Des Moines
Con R. Harken.....	Osceola
W. S. Greenleaf.....	Atlantic

COMMITTEE ON MILITARY AFFAIRS

Harold A. Spilman, Chairman.....	Ottumwa
Ben T. Whitaker.....	Boone
Robert S. Shane.....	Pilot Mound

PUBLIC RELATIONS COMMITTEE

H. E. Stroy, Chairman.....	Osceola
C. C. Collesler.....	Spencer
W. R. Brock.....	Sheldon

WOMAN'S AUXILIARY ADVISORY COMMITTEE

C. B. Hickenlooper, Chairman.....	Winterset
Walter Vander Wilt.....	Rock Rapids
W. L. Alcorn.....	Washington
F. K. Burnett.....	Clarinda

COMMITTEE ON SCIENTIFIC EXHIBITS

D. N. Gibson, Chairman.....	Des Moines
F. H. Lamb.....	Davenport
A. C. Starry.....	Sioux City

President Myers: This report of the president elect will have to be ratified.

Dr. Suchomel: I move that the committee appointments made by the incoming president be made official.

The motion was seconded, put to a vote and carried.

President Myers: Members of the House of Delegates, before we adjourn I want to express my appreciation of the attention you have given and the splendid interest you have shown. The meeting is adjourned.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

(Continued from page 295)

McNamara reported on the cancer manual. Dr. Henkin, chairman of the Committee on Constitution and By-Laws, discussed the amendment which would divide the state into three trustee districts.

The meeting adjourned at three-thirty p. m.

Meeting of the Committee on Child Health and Protection May 12, 1938

The Committee on Child Health and Protection met for breakfast in the Fort Des Moines Hotel, Thursday morning, May 12. R. H. McBride, Lee F. Hill, and H. E. Farnsworth, committee members; Fred Moore and R. D. Bernard of the State Society; and Mrs. Edith Barker, Mr. John Quist and Mr. Paul Taff of the Extension Service of Iowa State College, were present. The subjects discussed were 4-H Club examinations, and an educational health program for the clubs. Both groups worked out a plan which would be beneficial to the boys and girls in the 4-H Clubs, and the meeting adjourned at nine o'clock.

Meeting of the Fracture Committee May 12, 1938

The State Fracture Committee met in the Assembly Room at the Fort Des Moines Hotel, Thursday, May 12, at 12:30 p. m. Twenty-one members were present. The meeting was called to order by the chairman; the report of the Committee as published in the handbook was read, and the aims of the Committee were outlined. It was voted that the Fracture Committee ask the Board of Trustees for a sum of money to make motion pictures of fractures for educational purposes. It was also voted that the Fracture Committee contact the Program Committee and ask for a place on the program at the next annual meeting. It was decided to hold another Fracture Clinic in the fall, to be open to anyone who wished to attend—county delegates to pay their own travel expenses.

The meeting adjourned at one o'clock.

Meeting of the Council

May 12, 1938

The meeting was called to order by the chairman at one forty-five p. m. A letter from Dr. John H. Peck, superintendent of Oakdale Sanatorium, regarding admissions to the sanitarium and fees for services, was read and discussed. The matter was referred to the Medical Economics Committee for study and recommendation, before final decision by the Council.

Meeting of the Council

May 13, 1938

The meeting was called to order by the chairman at 9:15 a. m. Those present were: F. A. Hennessy, L. R. Woodward, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, H. A. Spilman, J. G. Macrae, M. C. Hennessy, L. L. Carr, and E. M. MacEwen. The first order of business was election of officers. M. C. Hennessy and J. E. Reeder were named chairman and secretary, respectively. The Speakers Bureau was discussed, with Dr. MacEwen expressing his views of how best to continue the work. It was decided to ask the present committee to serve until July 1, at which time the Council would meet again and make a final decision on the matter. The Executive Committee of the Cancer Committee was discussed, and it was voted to increase the number of members from three to five. A general discussion of the problems of the committee followed, and the meeting adjourned.

Meeting of the Board of Trustees

June 10, 1938

The Board of Trustees of the Iowa State Medical Society met in the central office Friday, June 10, at one p. m., with all members present. This was the annual meeting at which time the Board is organized, and Dr. Fay was named chairman of the Board and given authority to authorize routine bills for payment without the signature of the other two trustees.

The minutes of the previous meeting were read and approved; the monthly bills, and those incurred for the annual session, were approved. Dr. Lee F. Hill was elected editor of the JOURNAL for another year, and his salary set. Salaries for the Secretary, the Treasurer, and the office personnel were also fixed for the remainder of the year. Publication of the membership roster in the July JOURNAL was approved.

The Board discussed the survey to be made of medical care, and recommended that the chairman of the Medical Economics Committee submit an estimate of the probable expense of the survey to the Board at its next meeting. The bonds for the Secretary and Treasurer were continued for another year. JOURNAL advertisements were discussed. The Board then examined the securities of the Society, and the meeting adjourned at two-thirty p. m.

SIXTY-SEVENTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

The preliminary program of the scientific sessions of the Sixty-seventh Annual Meeting of the American Public Health Association has just been announced. The meeting will be held in Kansas City, Missouri, October 25 to 28, 1938, with more than three thousand professional public health workers in attendance. The program comprises fifty morning and afternoon meetings arranged by the ten sections of the organization which are: health officers, laboratory, vital statistics, public health engineering, industrial hygiene, food and nutrition, child hygiene, public health education, public health nursing, and epidemiology.

Symposia will be conducted on the following subjects: industrial hygiene administration, venereal disease control, laboratory diagnostic methods, expanding responsibilities in public health engineering, maternal and child health, frozen desserts, industrial hazards, water and sewage, typhoid fever, the next steps in school health services, and problems in connection with milk and dairy products. A full program of the session will be found in the August issue of the *American Journal of Public Health*.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 4:00 p. m.

WSUI—Mondays at 7:45 p. m.

July 13 Hay Fever, Julia Cole, M.D.

July 20 Sex Education, L. R. Woodward, M.D.

July 27 Water Hazards, Thomas L. Ward, M.D.

August 3 Poliomyelitis, H. E. Farnsworth, M.D.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Third International Goiter Conference, American Association for the Study of Goiter, September 12 to 14, 1938, in Washington, D. C.

Seventeenth Annual Scientific and Clinical Session of the American Congress of Physical Therapy, held jointly with the Twenty-second Annual Convention of the American Occupational Therapy Association, September 12 to 15, 1938, at the Palmer House in Chicago.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28 to 30, 1938, at the Hannibal-LeGrange College, Hannibal, Missouri.

Second National Assembly of the International College of Surgeons, October 13 and 14, 1938, at the Bellevue Stratford Hotel in Philadelphia, Pennsylvania.

Eleventh Annual Graduate Fortnight of the New York Academy of Medicine, October 24 to November 4, New York, N. Y. Subject for 1938 session—Diseases of the Blood and Blood-forming Organs.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
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THE 1938 STATE MEETING

The Ninth Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society was held in Des Moines, May 11 and 12, 1938, at the time of the meeting of the State Society. The program offered much of fellowship and stimulation.

In the absence of Mrs. S. E. Lincoln, President of the Auxiliary, the vice presidents acted as chairmen of the sessions. Mrs. Lincoln, recovering from injuries suffered in an automobile accident, had been able to give leadership in planning the excellent program of the convention.

A committee of Des Moines women, with Mrs. Charles A. Ryan as General Chairman, planned the delightful social occasions of the two days. Included in the garden pilgrimage on Wednesday afternoon were visits to the gardens of H. C. Plagman, Otto Brownell, R. G. Brenner, Harry A. Collins and John Schiltz, with tea served in the Charles A. Ryan garden.

The friendship dinner on Wednesday evening at Younkers Tea Room, followed by bridge or theater; the luncheon at the Hotel Fort Des Moines on Thursday noon with Dr. Edward M. Myers, President of the Iowa State Medical Society and Dr. C. B. Hickenlooper, Chairman of the Advisory Committee bringing greetings, and Dr. John I. Marker of Davenport, speaking on mental hygiene; and the convention dinner shared with our husbands were all full of good fellowship and interest. On Friday morning, guests accepted the opportunity of visiting the Junior League Convalescent Home, Smouse School, and the Maternal Health clinic, three important institutions.

The inspiration of the National Auxiliary program was brought into the meeting on Thursday by Mrs. Charles C. Tomlinson of Omaha, Nebraska, President-elect of the Woman's Auxiliary to the American Medical Association. Mrs. Tomlinson extended greetings and her appreciation of the work of the Iowa auxiliaries.

The exhibit chairman, Mrs. Hugh B. Woods, presented an exhibit book which is to be a part of the exhibit of the Woman's Auxiliary to the American Medical Association meeting in San Francisco. The Gertrude Downing membership cup, given for the best proportionate gain in membership, was presented to the Montgomery County unit by Mrs. Downing. Each year a prize is awarded for the best essay writ-

ten by a high school student on a selected subject. The subject this year was Highway Hazards, and the prize was won by Reeves Hall of Mason City, who read his essay to the convention. It is estimated that more than six hundred students took part in the essay contest.

One of the highlights of the program was an excellent symposium on "Public Relations." In this symposium there was presented a graphic picture of some of the ways in which our members are working and serving through the organizations. Mrs. W. A. Seidler of Jamaica presented the excellent health program which she and her committees are promoting through the Iowa Federation of Women's Clubs in radio programs and study courses on health subjects. Mrs. M. C. Hennessy of Council Bluffs, who is directing the work of the Women's Field Army in the state, described the Field Army as a lay organization to bring cancer information to the public under the direction of the American Medical Association and the Iowa State Medical Society. Mrs. M. H. Brinker of Yale, a representative of the State Association of School Boards on the Council for Better Education in Iowa (a council composed of representatives of the worthwhile organizations in the state for the purpose of raising the standards of our schools) said that we, as auxiliary members, are usually interested in the health work of the schools. The schools in our larger towns and cities are developing more adequate health programs. She said that the hundreds of small towns and rural schools would have to be helped before Iowa can rank anywhere near the top with other states in educational facilities and that as we build up the standards in our schools, the health programs will naturally follow along. Mrs. Frederick Murray, who is the author of a number of outlines and pamphlets to be used in parent education classes, summarized the health program of the Iowa Congress of Parent-Teachers Association, in which the Summer Round-up is one of the finest pieces of health work. Mrs. W. W. Bond presented the work of the Iowa Maternal Health League as a stepchild of medicine, which has the cooperation of doctors and social workers. Mrs. Bond said that the American Medical Association, in giving its approval to the work of the Maternal Health League a year ago, accepted contraceptives as legitimate preventive medicine and that in the

future, its work will become a natural part of every hospital and health center.

Dr. Brock, chairman of the Public Relations Committee, in summarizing the symposium, expressed his appreciation of the fine cooperation represented in it. He expressed the belief that our auxiliary's contribution could lie in helping the medical profession solve some of its problems.

The registrations of the convention were as follows: Physicians' wives, the majority of whom were from out of town, 153; auxiliary members, 84; counties represented, 46; auxiliary units, 14.

The officers for the coming year will be: President, Mrs. Dean W. Harman of Glenwood; president-elect, Mrs. E. A. Hanske of Bellevue; first vice president, Mrs. Russell C. Doolittle of Des Moines; second vice president, Mrs. R. A. Becker of Atlantic; third vice president, Mrs. F. W. Mulow of Cedar Rapids; fourth vice president, Mrs. Geo. E. Egermayer of Elliott; secretary, Mrs. Jay C. Decker of Sioux City; treasurer, Mrs. W. R. Hornaday of Des Moines; director (one year term), Mrs. F. P. Winkler of Sibley and director (two year term) Mrs. E. F. Warren of Stuart.

Mrs. Fred Moore

Pottawattamie County

More than sixty-five women attended a tea, Monday, May 30, at the home of Mrs. Grant Augustine in Council Bluffs, when the Woman's Auxiliary to the Pottawattamie County Medical Society entertained members of the Douglas County (Omaha) Medical Auxiliary. Mrs. Karl R. Werndorff was in charge of the musicale which preceded the tea, and Mrs. C. V. Edwards presided at the refreshment table. Honored guests of the occasion were Mrs. C. C. Tomlinson of Omaha, president elect of the Woman's Auxiliary to the American Medical Association; Mrs. D. W. Harman of Glenwood, president of the Woman's Auxiliary to the Iowa State Medical Society; and Mrs. Walter P. Hombach, president of the Woman's Auxiliary to the Pottawattamie County Medical Society.

IMPRESSIONS OF THE NATIONAL MEETING

The meetings of the Convention were held at the Hotel Fremont in San Francisco, where fifteen years ago this organization was born. At the opening of the session more than six hundred women were registered. Those from Iowa whom I saw were Mrs. Harold W. Morgan and Mrs. E. T. Warren, who were delegates; and Mrs. Walter E. Baker, Mrs. Walter L. Bierring, Mrs. Donald H. Kaump and Mrs. Fred Moore.

The writer attended the first morning business session and a part of the second, the Southern Breakfast and the Aloha Luncheon. The reports given at the business sessions will not be discussed here. They will be available in print elsewhere. However, a word should be said in praise of our national organization's program and policy. We should indeed be happy to be connected with such a group and at no time is this more evident than at a national meeting. One thought from the report of the state of Utah

lingers: "We are making no effort to get women to join, but we are making an effort to have such interesting programs that women will want to belong."

We wondered what the Southern Breakfast would be; strawberries, shirred eggs, ham and toast, and pancakes with honey or syrup. The breakfast honored Mrs. Augustus S. Kech of Altoona, Pennsylvania, president of the Woman's Auxiliary to the American Medical Association, who was an extraordinarily charming and capable officer. Dr. John H. G. Upham of Columbus, Ohio, president of the American Medical Association, Dr. Irvin Abell of Louisville, Kentucky, president-elect, Dr. A. T. McCormack, Commissioner of Health of Kentucky, and Mrs. Kech were speakers. Dr. Upham struck the keynote when he said that the American Medical Association needs the Woman's Auxiliary to show the public what the doctor is. He endorsed "medical movies," saying that the demand by the public for better medical care would stimulate doctors to give it. Dr. Abell praised the activity of the Woman's Auxiliary to the Kentucky State Medical Society, their gathering of medical objects of historical interest, their raising of shafts in Danville, Ohio, in honor of Dr. Ephraim McDowell, the first surgeon to perform a major abdominal operation, and of Jane Todd Crawford, his patient, who submitted to it. (This was in 1809, before the days of anesthesia.) Dr. Abell recommended that each state auxiliary study the medical history of its state.

I had an opportunity to talk with Mrs. McCormack through whose especial effort the Kentucky interest in history has been developed. I asked her, "How many of your women are interested?" Looking up at me, she said, "For a long time I was the only one. Now we try to have one woman in each county active in finding out about the doctors of the past." It takes courage to be the only one. Dr. McCormack gave a pleasant talk emphasizing the difference between the doctor of the past and the doctor of the present. One was impressed anew with the vast amount of knowledge and experience required of our doctor husbands, and the responsibility carried by them in the life of the community.

Mrs. Kech brought a diary of a doctor's wife written from 1820 to 1860. It was funny and pathetic. We find the following words in it: "They want us to be beautiful, to have a good disposition, to be neat and well dressed, to have one hand in the kitchen and to play the organ with the other; but they do not want us to think." Not so today, if we accept the admonitions of our national officers. They want us to think; they do want us to act; they say they need us!

At the Aloha luncheon Dr. Abell in an exceedingly well-prepared speech, emphasized the needs for well informed doctors' wives properly to represent the profession in lay groups. Dr. Abell's speech was so worthwhile that the writer wishes to recommend it for each county auxiliary. It could and should be read as a part of the program some time during the next few months in every auxiliary in the state of Iowa.

Mrs. Anna T. Glomast

SOCIETY PROCEEDINGS

Buchanan County

The Buchanan County Medical Society held its second quarterly meeting at the Wapsipinicon Golf and Country Club on the afternoon and evening of Thursday, June 16. Some par golf along with hooks and slices occupied a goodly number of men during the afternoon. At seven o'clock a fine dinner was served at the club to the group which numbered forty. This was the Fourth Annual Golf and scientific program sponsored by the local society, and it was unanimously agreed to hold it again next year. Henry G. Decker, M.D., of Des Moines, addressed the group on The Care and Treatment of Head Injuries, and his lecture was very much enjoyed by all.

N. L. Hersey, M.D., Secretary

Crawford County

The regular monthly meeting of the Crawford County Medical Society was held in Denison at the Hotel Denison, Tuesday, June 7. Following a short business meeting a symposium on Arthritis was presented. The first speaker of the evening was M. William Barry, M.D., instructor in medicine at Creighton University School of Medicine, Omaha, who discussed the Diagnostic and Medical Aspects of Arthritis. He presented many interesting statistics in regard to the frequency of this disease, and the economic loss incident to it. The second speaker was Eugene Simmons, M.D., instructor in medicine at the University of Nebraska School of Medicine, Omaha, who spoke on The Treatment of Arthritis, with particular reference to fever therapy. Considerable discussion followed both papers and a fine attendance was present. The next meeting of the society will be in the early fall.

J. James Duffy, M.D., Secretary

Hardin County

C. W. Seibert, M.D., of Waterloo, was guest speaker for the Hardin County Medical Society at a meeting held in Iowa Falls, Friday, June 24. Dr. Seibert spoke on The Therapeutic Use of Endocrine Products in Obstetrics and Gynecologic Sterility.

W. E. Marsh, M.D., Secretary

Harrison County

Two Council Bluffs physicians furnished the scientific program for members of the Harrison County Medical Society when they met in Logan, Tuesday, June 28. Eugene B. Floersch, M.D., read a paper on Cardiovascular Disease, and Arthur C. Brown, M.D., spoke on The Injection Treatment of Hernia.

Jackson County

Thirty members of the Jackson County Medical Society and their guests met in Maquoketa, Monday, June 20, at which time the following program was given: Empyema, Robert H. Lott, M.D., of

Carroll; Asthma and Hay Fever, Lawrence J. Halpin, M.D., of Cedar Rapids; and Obstruction of the Bowels, Clyde B. Meffert, M.D., of Cedar Rapids.

Linn County Annual Meeting

The annual meeting of the Linn County Medical Society was held Thursday, June 2, in Cedar Rapids, at Sokol Hall. After a Dutch lunch and a program of informal entertainment, Dr. Thomas F. Suchomel was installed as president and the following officers were elected to serve the society for the coming year: Dr. W. J. Foster, president elect; Dr. Phil Crew, vice president; Dr. John T. Hecker, secretary; Dr. A. J. Smrha, treasurer; Drs. J. L. von Lackum and Suchomel, delegates; and Drs. H. L. Van Winkle and Jennings Crawford, alternate delegates. Dr. Crew is from Marion; the remainder are Cedar Rapids physicians.

John T. Hecker, M.D., Secretary

Marion County

The following program was presented for the Marion County Medical Society when that organization met in Pella, Thursday, June 30: Delegate's Report, C. S. Cornell, M.D., of Knoxville; Intracapsular Fractures of the Femur, J. J. Sybenga, M.D., of Pella; Report of Delegate to Fracture Committee of the State Society, and address on Fractures of the Surgical Neck of the Humerus and Inferior Maxilla, C. I. Fox, M.D., of Pella; and Pott's Fracture, Carl Aschenbrenner, M.D., of Pella.

J. R. Wright, M.D., Secretary

Union County

The regular monthly meeting of the Union County Medical Society was held at the Greater Community Hospital in Creston, Wednesday, June 1. John A. Liken, M.D., of Creston, presented a very interesting paper on Gas Gangrene and Its Latest Treatment. A lively discussion followed.

Carl E. Sampson, M.D., Secretary

Wayne County

Harry S. Conrad, M.D., of St. Joseph, Missouri, was guest speaker for the Wayne County Medical Society dinner meeting held at the Club House in Walden Park in Corydon, Tuesday, June 14. Dr. Conrad spoke on Cancer of the Rectum. At the business meeting of the organization it was voted to carry out the state tuberculosis program.

G. H. Sollenbarger, M.D., Secretary

Sixth Councilor District Meeting

Physicians in the nine counties comprising the Sixth Councilor District of the Iowa State Medical Society, met in Tama, Wednesday, June 29, for the annual "gamefest" of the group. Pharmacists, dentists, their wives, and nurses of the district were

invited guests for the occasion. An afternoon of golf and bridge started at two o'clock, followed by a short business session of officers from five-thirty to six-thirty o'clock. After the evening dinner, George W. McChane of Waterloo, president of the Iowa Pharmaceutical Association, presented the address of the evening, entitled, Important Phases of Interprofessional Association. Dr. C. W. Ellyson of Waterloo, councilor for the sixth district, and Dr. A. A. Pace of Toledo, deputy councilor for Tama County, were in charge of arrangements for the meeting. The nine counties in the district are: Benton, Black Hawk, Grundy, Hardin, Iowa, Jasper, Marshall, Poweshiek and Tama.

Tri-County Medical Society

The Tri-County Medical Society, composed of physicians in Henry, Jefferson and Washington counties, held its meeting in Washington, Tuesday, June 28. After a six-thirty dinner, Donald C. Conzett, M.D., of Dubuque, Chairman of the State Society Fracture Committee, presented an illustrated lecture on Hip Fractures. Thirty-two physicians were in attendance.

W. S. Kyle, M.D., Secretary
Washington County Medical Society

PERSONAL MENTION

Dr. Stanley T. Moen, formerly of Rock Rapids, has located in Hartley, where he will be associated with Dr. W. C. Hand at the Hand Hospital. Dr. L. E. Hudgel who has been with Dr. Hand for several months has gone to Columbus, Ohio, where he will be working in the Department of Pathology at the University of Ohio.

Dr. C. M. Franchere of Mason City, spoke over Radio Station KGLO in Mason City, Friday, July 1, on the subject, "How to Be Healthy in the Summer Time."

Dr. Arline M. Beal, who has spent a number of years in India where she was physician in charge of Kugler Hospital, has located in Davenport and opened offices at 520 First National Bank Building. Dr. Beal is a graduate of the Women's Medical College of Pennsylvania.

Dr. Nelle S. Noble of Des Moines, was named president of the Women's Medical Association, at the annual meeting of that organization held recently in San Francisco.

Dr. A. W. Brunk, formerly of Prescott, has moved to Creston, where he will continue in the practice of medicine.

Dr. John C. Backe who was graduated in 1927 from the University of Michigan Medical School in Ann Arbor, is coming to Muscatine where he will be associated with Dr. T. I. Wigim. Dr. Backe served his internship at St. Mary's Hospital in Detroit, and has been connected with other Detroit hospitals since

his graduation. Dr. Wigim and family plan to leave for Pasadena, California, upon Dr. Backe's arrival in Muscatine.

Dr. Ralph L. Irwin, who has practiced for the past four years in Paullina, is returning to the State University of Iowa, College of Medicine, where he will take advanced work in the department of surgery. He has disposed of his practice to Dr. C. L. Samuelson, a recent graduate of the State University of Iowa, College of Medicine, who has been serving his internship in Detroit, Michigan.

MARRIAGES

Miss Jean Beyer and Dr. Robert J. Porter, both of Des Moines, were united in marriage June 16 at the home of the bride in Des Moines. After a trip to Alaska, Dr. and Mrs. Porter will be at home in Des Moines, where the bridegroom has been practicing for the past few years.

DEATH NOTICES

Gray, Albert Claire, of Keokuk, aged fifty-five, died June 15. He was graduated in 1908 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a member of the Lee County Medical Society.

Johnson, Frank Victor, of Maquoketa, aged sixty-eight, died June 2 after an extended illness. He was graduated in 1897 from Bennett College of Eclectic Medicine and Surgery, Chicago, and at the time of his death was a member of the Jackson County Medical Society.

Keith, Wilfred Kennedy, of Creston, aged sixty-seven, died June 30 of angina pectoris while visiting in Los Angeles, California. He was graduated in 1894 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Union County Medical Society.

Roark, George L., of Tabor, aged fifty-seven, died June 11 of a heart ailment following a long illness. He was graduated in 1918 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Fremont County Medical Society.

Robbins, Jesse Howard, of Sioux City, aged sixty-eight, died June 18 after a heart attack. He was graduated in 1895 from the Sioux City College of Medicine, and at the time of his death was a member of the Woodbury County Medical Society.

ADDITIONAL EXHIBITORS

Firms having exhibits at the annual session of the Iowa State Medical Society who were not listed in the hand program are the Riggs Optical Company, and the American Optical Company. The State Society is glad to make this acknowledgment of their exhibits.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- THE HEART IN PREGNANCY**—By Julius Jensen, Ph.D., assistant professor of clinical medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.50.
- A TEXTBOOK OF PATHOLOGY**—By William Boyd, M.D., professor of pathology and bacteriology, University of Toronto. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.
- HEMORRHOIDS**—By Marion C. Pruitt, M.D., associate in surgery, Emory University School of Medicine, Atlanta, Georgia. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.00.
- SYMPTOMS OF VISCERAL DISEASE**—By Francis Marion Pottinger, M.D., professor of clinical medicine, University of Southern California. Fifth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.00.
- SYPHILIS, GONORRHEA AND THE PUBLIC HEALTH**—By Nels A. Nelson, M.D., director, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health, and Gladys L. Crain, M.D. The Macmillan Company, New York, 1938. Price, \$3.00.
- ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION**—By Marion Douglass, M.D., assistant professor of gynecology, Western Reserve University; and Robert L. Faulkner, M.D., senior clinical instructor in gynecology, Western Reserve University. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.75.
- THE NEW INTERNATIONAL CLINICS**—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Volume II, First Series (old Forty-eighth). J. B. Lippincott Company, Philadelphia, New York and Montreal, 1938.
- INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS**—By H. O. McPheeters, M.D., attending physician, New Asbury, Fairview and Northwestern Hospitals, Minneapolis, Minnesota; and James K. Anderson, M.D., instructor in surgery, University of Minnesota School of Medicine. The F. A. Davis Company, Philadelphia, 1938. Price, \$4.50.
- PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY**—By Adam Edward Schlanser, M.D., colonel, Medical Corps, United States Army. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.
- MEDICAL STATE BOARD QUESTIONS AND ANSWERS**—By R. Max Goepp, M.D., formerly professor of clinical medicine, Graduate School of Medicine, University of Pennsylvania. Seventh edition, revised. The W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.
- ELECTROTHERAPY AND LIGHT THERAPY**—By Richard Kovacs, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Third edition, revised. Lea and Febiger, Philadelphia, 1938. Price, \$7.50.
- MATERIA MEDICA, DRUG ADMINISTRATION AND PRESCRIPTION WRITING**—By Oscar W. Bethea, M.D., professor of clinical medicine, Tulane School of Medicine. Fifth edition, revised. F. A. Davis Company, Philadelphia, 1938. Price, \$5.00.
- PEDIATRIC SURGERY**—Edward C. Brenner, M.D., director of surgery, Riker's Island Hospital. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.
- A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN**—By John A. Hardy, M.D., El Paso, Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.

BOOK REVIEWS

A BIOLOGICAL APPROACH TO THE PROBLEM OF ABNORMAL BEHAVIOR

By Milton Harrington, M.D., psychiatrist, Institution for Male Defective Delinquents, Napanoch, N. Y. First edition. The Science Press Printing Company, Lancaster, Pennsylvania, 1938.

In this volume the author, at considerable length, advances a rational theory by means of which abnormal behavior may be explained on a materialistic and mechanistic basis. It should appeal to the common and scientific sense of the reader, whether he is a general medical practitioner or neuropsychiatrist.

The underlying thesis of this contribution is that human conduct, normal or abnormal, depends on certain responses to stimuli of an external or internal character, and that the most complicated mental reactions which lead to abnormal behavior are conditioned by the degree of native integrity of the nervous system acted upon, the previous protection of that nervous system from weakening or destructive influences, and the quality and intensity of the activating stimuli.

The author, in a kindly yet logical manner, robs the psychoanalysts of some of their semi-mystical rationalizations, and opens up a highway of approach which eliminates a detour through the moonlit forest of dreamland where night crawlers are looked upon as symbols of satisfied desire, and

gnomes are considered sex assassins. In this volume, psychoanalysis has been given a degree of credit not unlike that awarded a buckeye or potato in the pocket, the author indicating that to faith rather than rationale is credit due.

It is the impression of the reviewer that Milton Harrington has made a real contribution to neuropsychiatric literature. F. A. E.

X-RAYS AND RADIUM IN THE TREATMENT OF DISEASES OF THE SKIN

By George M. MacKee, M.D., professor of clinical dermatology, New York Postgraduate Medical School and Hospital, Columbia University. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

This work on x-ray and radium therapy is of chief interest, as the title implies, to those employing these agents in the treatment of cutaneous disorders. A large portion of the first part of the volume is devoted to a discussion of the physical properties of roentgen radiation and radium emanation, technical methods, sources of error, etc. The second portion deals with biologic properties, outlining and discussing the disorders which are or which are not influenced by x-ray or radium. The sections dealing with the physical properties are simply written and understandable to one without special training in this field. The volume as a whole contains an abundance of information

valuable to those who use these agents in superficial therapy. The final chapter deals with the medico-legal relations of roentgen and radium therapy. Complete bibliographic material is included at the close of each chapter.

W. M. W.

TISSUE IMMUNITY

By Reuben L. Kahn, M.S., D.Sc., University of Michigan, Ann Arbor, Michigan.
Charles C. Thomas, Springfield, Illinois.
Price, \$7.50.

This book constitutes an authoritative work, written as it is by a man preëminent in the field of bacteriology and serology. Quoting from the author, "This volume presents quantitative studies on tissue immunity and correlates the results of these studies with manifestations of infection and immunity noted in the clinic." Included in this volume are eighteen chapters in each of which Kahn introduces the problems of the particular phase dealt with in this chapter. He then proceeds to present a series of experiments dealing with the particular problem considered and ends the chapter with a summary of the results and correlation of the experimental with the clinical side.

The various chapters deal with the tissues in the immune state, the non-immune state, and the period of incubation. There are chapters on the reaction of tissue as immunity increases and as it subsides, as well as the immunologic differences of the different tissues. Several chapters cover what the author has termed the disimmune state and the phenomenon of tissue necrosis occurring in specific pre-existing inflammatory foci, the tissue in natural and passive immunity, and in the young. There are several other chapters dealing with different aspects of immunity as well. The last two chapters deal with the theoretic and the practical aspect of tissue immunity. In the last chapter the author has attempted to correlate present day knowledge and the experimental work which he has reviewed, with the clinical manifestations present in various diseases.

It seems that this book would be of considerable value, particularly to one interested in diseases of the skin or in immunology.

D. H. K.

CANCER AND DIET

By Frederick L. Hoffman, LL.D., The Biochemical Research Foundation of the Franklin Institute, Philadelphia. The Williams and Wilkins Company, Baltimore, 1937. Price, \$5.00.

The author is a statistician for a life insurance company and the work emanates from The Biochemical Research Foundation of the Franklin Institute in Philadelphia. The first part is a resumé of pertinent statements from the English, French, and German literature, from 1777 to 1937. It is of interest historically, but from a scientific standpoint, it is valueless, since anything mentioned is quoted, regardless of the source. Part II discusses dietary changes dur-

ing recent years, including international comparisons; and Part III summarizes results of animal experiments. The last section is a questionnaire study of over 2,000 cancer patients, and half that many normal controls.

Although the author admits that much of the evidence is confusing, conflicting, and inconclusive, he nevertheless draws numerous conclusions, the main one being that cancer is caused by over-eating. He reasons in this fashion; over-nutrition in older people, because of lack of exercise, causes pent-up energy, which aggravates the normal old age degenerative processes (catabolism) to such an extent that other exciting factors, such as local chronic irritation, will cause increased, uncontrolled cell proliferation.

The volume may have merit as a reference book for library use because of the extensive (but far from complete) summary of the literature, and because of the information obtained as to eating habits from such a large series of cases (especially for comparison with other series, past and future), but the conclusions are, in the reviewer's opinion, not justified from the evidence.

A. M. G.

MANAGEMENT OF THE SICK INFANT AND CHILD

By Langley Porter, M.D., dean, University of California Medical School; and William E. Carter, M.D., director, University of California Hospital Out Patient Department. Fifth revised edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$10.00.

This is the fifth edition of a volume originally published in 1922 for the purpose of codifying and presenting in one volume the various aids in the treatment of sick infants and children. The volume is arranged in the usual manner of pediatric texts, it is printed on good paper in excellent type, and the content is expressed in a clear and concise manner.

This is an extremely practical and useful volume which would be of real value to any practitioner dealing with sick children. It is to be regretted that there is no bibliography and that certain important phases of pediatric therapy are so sketchily presented.

D. K.

PHYSIOLOGY IN HEALTH AND DISEASE

By Carl J. Wiggers, M.D., professor of physiology in the School of Medicine of Western Reserve University, Cleveland. Second edition, thoroughly revised, and illustrated with 191 engravings. Lea and Febiger, Philadelphia. Price, \$9.00.

As the author says, "This textbook is written primarily to meet the needs of medical students, clinicians and progressive practitioners of medicine."

Wiggers has divided this book into ten sections which deal in turn with the following subjects: muscular contraction and associated phenomena, the physiology of the peripheral and central nervous system, blood and blood-forming organs, respiration, the

heart and circulation, physiology of the alimentary tract, water transport and excretory systems, metabolism and nutrition, endocrine organs, and finally a section on reproduction.

The book as a whole is well written and covers an immense amount of literature, as well as many of the author's personal observations. The section on the heart and circulation is particularly fine and represents much of the author's own research. In this portion of the book many of the clinical phenomena which characterize various disease states are considered, as well as the physiologic background for this particular manifestation. The volume is well worth reading.

D. H. K.

SYNOPSIS OF GENITO-URINARY DISEASES

By Austin I. Dodson, M.D., professor of surgery, Medical College of Virginia, Richmond. Second edition, with 112 illustrations. The C. V. Mosby Company, St. Louis, 1937. Price, \$3.00.

As implied in the title, this is a little book of but 284 pages. It abounds with frequent illustrative pen and ink drawings, together with eight photographs which add to the excellence of the manual. The author contends, and rightly, that details pertaining to clinical urology, that is, detailed description in measures of treatment and surgical technic, should be obtained elsewhere. Even so, this is a manual which should be available to every practitioner of medicine who comes in contact with genito-urinary problems.

One of the chapters deals with the dietetic management of urinary infections and conditions associated with calculous disease. The latest views on these disorders are presented. The chapter on congenital anomalies presents an accurate picture of the numerous and varied factors causing urogenital disorders which are encountered frequently in private practice.

In the eyes of the reviewer, the book is well written. Manifest care has been taken in the assimilation of data. The material is presented in a brief and concise manner, a desirable feature for every busy practitioner. At the same time, the manual can be termed as being complete, covering the entire field of urogenital diseases, an important phase of medical practice.

W. R. H.

HERNIA

By Leigh F. Watson, M.D., California Lutheran Hospital and Methodist Hospital of Southern California, Los Angeles. Second Edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$7.50.

This volume of over five hundred pages is timely, practical and comprehensive. While the author makes no claims to originality and only seldom records his own personal opinions, he has done a thorough job of combing the source materials for the variety of information which he offers. He has added much interest by the historical notes and citations which are ordinarily not available. Moreover, in describing un-

usual and rare types of hernia, a very definite service is rendered even to the experienced surgeon. The chapters on the injection treatment constitute a further valuable addition.

Concerning the arrangement of the material and general readability one is less appreciative. A tendency to repetition is conspicuous and very much disturbs the consecutive order. One feels that more diligent editing would have homogenized many of the similar chapters and thus have improved the smoothness of the work without abridging the subject matter in any way.

E. J. H.

THE 1937 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY

Edited by Joseph B. DeLee, M.D., professor of obstetrics, University of Chicago Medical School; and J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1938. Price, \$2.50.

The authors of this issue of the year book have stressed very emphatically the advisability that physicians should be cautious in accepting many of the recent diagnostic and therapeutic methods, since in some cases these new agencies are definitely harmful to the patient. The discussion of the authors' opinion as to the relative value of roentgen studies of the female pelvis with reference to obstetric practice should be read by all physicians doing any x-ray work in obstetrics. This is another evidence of our authors' conservatism and their attempts to modify some of the radicalism sweeping the obstetric practice.

This book should serve as a useful reference to every doctor in the general practice of medicine or obstetrics and gynecology.

O. A. E.

THE 1937 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY

By Hans H. Reese, M.D., professor of neurology and psychiatry, University of Wisconsin Medical School; Harry A. Paskind, M.D., assistant professor of nervous and mental diseases, Northwestern University School of Medicine; and Elmer L. Sevringhaus, M.D., associate professor of medicine, University of Wisconsin Medical School. The Year Book Publishers, Chicago, 1938. Price, \$3.00.

Since this volume is, in itself, a yearly review of the literature on neurology, psychiatry and endocrinology, it is impossible to comment upon its contents in detail. It is, in a sense, a "readers' digest" as pertaining to the subjects covered. For many years the predecessors of the 1937 edition have been invaluable as a handy reference book by means of which the reader is enabled to familiarize himself with the recent advances made on the subjects dealt with. The 1937 edition is probably more complete and comprehensive than any which have preceded it.

F. A. E.

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 Gibson, Paul E., Des Moines
 Gibson, Preston E., Davenport
 Gifford, Albert K., Cedar Rapids
 Gilbert, Alfred E., Nevada
 Giles, George C., Oakland
 Gilfillan, Bruce L., Keokuk
 Gilfillan, Earl E., Pulaske
 Gilfillan, George W., Bloomfield
 Gilfillan, Homer J., Cantril
 Gillespie, Hamilton S., Sioux City
 Gillett, Francis A., Oskaloosa
 Gillies, Carl L., Iowa City
 Gillmor, Benjamin F., Red Oak
 Gingles, Earl E., Onawa
 Gingles, William W., Castana
 Gittins, Thomas R., Sioux City
 Gittler, Ludwig, Fairfield
 Givens, Hezekiah F., West Bend
 Glasscock, Thomas J., Hawarden
 Glesne, Orvin G., Monona
 Glesne, Otto N., Fort Dodge
 Glew, Percival B., Dallas Center
 Gleysteen, Dierk J., Alton
 Gloeckler, Bernhard B., Mt. Pleasant
 Glomset, Daniel J., Des Moines
 Glynn, Charles E., Davenport
 Goenne, William C., Davenport
 Goggin, John G., Ossian
 Goodenow, Sidney B., Colo
 Goodman, Jonathan N., Wood, Wisconsin
 Goodrich, Joseph A., Des Moines
 Gordon, Arnold M., Des Moines
 Gorrell, Ralph L., Clarion
 Gottlieb, Jacques S., Iowa City
 Gottsch, Erwin J., Shenandoah
 Gould, George R., Conrad
 Gould, Isaac L., Kellogg
 Gower, Walter E., Pocahontas
 Graber, Fred J., Stockport
 Graber, Harold E., Fairfield
 Graening, Charles H., Waverly (L.M.)
 Graham, George W., Collins
 Graham, James W., Sioux City
 Gran, Albert G., Storm Lake
 Grant, Cecil C., Cedar Falls
 Grant, John G., Ames
 Grau, Amandus H., Denison
 Gray, Albert C., Keokuk*
 Gray, Henry A., Keokuk
 Gray, Howard D., Des Moines
 Gray, Ralph E., Eldora
 Gray, Samuel T., Albia (L.M.)
 Grayston, Jesse T., Cedar Rapids
 Greek, Louis M., Des Moines
 Greene, James A., Iowa City
 Greenleaf, William S., Atlantic
 Greenlee, Max R., Oskaloosa
 Griffin, Clark C., Jr., Vinton (L.M.)
 Griffin, Frank L., Baldwin
 Griffin, John M., Des Moines
 Griffin, Sarah M. F., Manson
 Griffis, Arthur A., Tipton
 Grimm, Peter G., Spirit Lake
 Groman, August, Odebolt (L.M.)
 Grossman, Edward C., Orange City
 Grossman, Raymond S., Marshalltown
 Grove, Emil G., Boone
 Grubb, Merrill W., Galva
 Gunn, Ross E., Boone
 Gurau, Henry H., Des Moines
 Gutch, Roy C., Chariton
 Hageboeck, Alphonse L., Davenport
 Hagedorn, Harry H., Sioux City
 Hagen, Edward F., Decorah
 Hann, James P., Sioux City
 Haisch, Lily K., Dubuque
 Haisch, Otto E., Dubuque
 Hale, Albert E., Dougherty
 Hall, Bonnybel A., Maynard
 Hall, Cluley C., Maynard
 Halloran, William H., Audubon
 Hamilton, Benjamin C., Jefferson (L.M.)
 Hamilton, Benjamin C., Jr., Jefferson
 Hamilton, Cecil V., Garner
 Hamilton, Harriett S., Council Bluffs
 Hamilton, Henry H., Cedar Rapids
 Hamilton, William F., Marshalltown
 Hammer, Marion R., Newton (L.M.)
 Hamstreet, Wilbur F., Titonka
 Hanchett, W. McMicken, Council Bluffs
 Hancock, John C., Dubuque
 Hand, William C., Hartley
 Hands, Sidney G., Davenport
 Hankey, Daniel C., Council Bluffs
 Hanna, John T., Burlington
 Hansell, William, Ottumwa (L.M.)
 Hansell, William W., Des Moines
 Hansen, Fred A., Stanton
 Hansen, Niels M., Des Moines
 Hansen, Robert R., Marshalltown
 Hanske, Edward A., Bellevue
 Hanson, Frank H., Magnolia
 Hanson, Laurence C., Jefferson
 Hanson, Russell R., Storm Lake
 Hardin, John F., Bedford
 Hardwig, Oswald C., Waverly
 Harken, Conred R., Osceola
 Harkness, Gorden F., Davenport
 Harlan, Charles D., Keswick
 Harman, Dean W., Glenwood
 Harnagel, Edward J., Des Moines
 Harp, John F., Prairie City (L.M.)
 Harpel, Kate S., Boone
 Harper, Edna K. Sexsmith, Greenfield
 Harper, James A., Greenfield
 Harriman, Walter F., Sioux City

- Harrington, Raymond J., Sioux City
 Harris, Clinton E., Grinnell
 Harris, Edwin E., Grinnell (L.M.)
 Harris, Grove W., Marshalltown
 Harris, Herbert H., Rockwell City
 Harrison, Glenn E., Mason City
 Hart, William E., Odebolt
 Hartje, Harry F., Adair
 Hartley, Byron D., Mt. Pleasant
 Hartley, George A., Battle Creek
 Hartman, Frank T., Waterloo (L.M.)
 Hartman, Howard J., Waterloo
 Hasek, Victor H., Cedar Rapids
 Hastings, John C., Elma
 Hatch, Alice H., Des Moines
 Haugen, Albert I., Ames
 Haumeder, Hans, New Hampton
 Haumeder, Marie E., New Hampton
 Havlik, Aloysius J., Tama
 Hawkins, Emmet L., Council Bluffs
 Hawley, Olin B., Corning
 Hay, William E., Avoca
 Hayek, John M., Des Moines
 Haymond, Harold E., Perry
 Hayne, Willard W., Iowa City
 Hazard, Charles M., Arlington
 Hazard, Theodore L., Iowa City
 Heady, Conda C., Bloomfield (L.M.)
 Heald, Clarence L., Sigourney
 Healy, Maurice A., Boone
 Hearst, George E., Cedar Falls
 Heathman, Frank E., Pocahontas
 Hecker, Frederick A., Ottumwa
 Hecker, John T., Cedar Rapids
 Hedgecock, Lewis E., Hampton
 Heeren, Ralph H., Iowa City
 Heetland, Louis H., Sibley
 Heffernan, Chauncey E., Sioux City
 Heilman, Ernest S., Ida Grove (L.M.)
 Heise, Carl A., Missouri Valley
 Heles, John B., Dubuque
 Helgeson, Peter A., Lake Mills
 Henderson, Lauren J., Cedar Falls
 Henderson, Walker B., Oelwein
 Hendrickson, Alvin H., Sioux City
 Henely, Edmund, Nora Springs
 Henkin, John H., Sioux City
 Henneger, William A., Dubuque
 Hennes, Raphael J., Oxford
 Hennessy, Felix A., Calmar
 Hennessy, J. Donald, Council Bluffs
 Hennessy, Maurice C., Council Bluffs
 Henning, Garold G., Milford
 Henry, Clyde A., Farson
 Henry, Hiram B., Des Moines
 Herman, John C., Traer
 Hermence, George E., Marshalltown
 Herry, Peter M., Prairie City
 Herrick, Thomas B., Manson
 Herrick, Thomas G., Gilmore City
 Herrmann, Christian H., Jr., Amama
 Herrmann, Walter W., San Francisco, Calif.
 Herron, David A., Alta
 Hersch, Thomas F., Cedar Rapids
 Hersey, Nelson L., Independence
 Hesbacher, Edward N., Mt. Vernon
 Hess, Howard R., Cedar Rapids
 Hess, William C., Cresco
 Heusinkveld, Henry J., Jr., Clinton
 Hexom, John D., Decorah
 Hibbe, Henry B., Dubuque
 Hibbs, Fred V., Carroll
 Hickenlooper, Carl B., Winterset
 Hickman, Charles S., Centerville
 Hicks, Wayland K., Sioux City
 Hight, William B., Des Moines
 Hill, Chalmers A., Council Bluffs
 Hill, Christine S. E., Council Bluffs
 Hill, James C., Newton
 Hill, James W., Mt. Ayr.
 Hill, Julia, Pittsburgh, Pennsylvania
 Hill, Lee F., Des Moines
 Hill, Willard H., Sioux City
 Hills, Henry M., Lamoni
 Hills, Robert A., Russell
 Hinchliff, James, Minburn
 Hinrichs, Robert G., Manson
 Hinshaw, Sylvester E., Newton
 Hobart, Francis W., Lake City
 Hoegen, Joseph A., Wyoming
 Hoeven, Edward B., Ottumwa
 Hoffman, Paul M., Tipton
 Hoffmann, Alfred A., Waterloo
 Hofmann, William T., Davenport
 Hofstetter, George, Clinton (L.M.)
 Hogle, William M., Keokuk
 Holbrook, Francis R., Des Moines
 Holleman, Joseph H., Holstein
 Hollis, Edward L., Marengo
 Holman, David O., Nora Springs
 Holman, Henry D., Mason City
 Holtey, Joseph W., Ossian
 Holtz, Harvey E., Iowa City
 Hombach, Walter P., Council Bluffs
 Hombach, William P., Council Bluffs
 Hommel, Placido R. V., Elkader
 Hooper, Lester E., Indianola
 Hope, Frank G., Sioux City
 Hornaday, William R., Des Moines
 Horton, Vincent J., Calmar
 Hosford, Horace F., Burlington
 Hospodarsky, Leonard J., Ridgeway
 Hotz, Edward J., Strawberry Point
 Houghton, Fred W., Council Bluffs
 Houghton, Henry S., Peiping, China
 Houlihan, Jay E., Mason City
 Houlihan, Francis W., Ackley
 Houlihan, Thomas J., Ida Grove (L.M.)
 Householder, Harold A., Winthrop
 Houser, Cass T., Cedar Rapids
 Houston, Bush, Nevada
 Hovendon, John H., Laurens
 Howard, Fred H., Strawberry Point
 Howard, Lloyd G., Council Bluffs
 Howard, William H., Decorah
 Howe, James M., Hillsboro
 Howe, Lysle C., Muscatine
 Howell, Chauncey W., Grinnell
 Howell, Elias B., Ottumwa
 Howland, Charles F., Des Moines
 Hubbard, Frank A., Columbus Junction
 Hudek, Joseph W., Garnaville
 Hudgel, Lawrence E., Columbus, Ohio
 Hudson, Jessie B., Sheffield
 Hughes, Robert O., Ottumwa
 Hull, Henry C., Jr., Washington (L.M.)
 Hully, Henry D., Griswold
 Hunt, Ernest A., Des Moines*
 Huntley, Charles C., Avoca
 Huntton, Gardner A., Des Moines
 Hurd, Charles A., Northwood
 Hurevitz, Hyman M., Davenport
 Huston, Daniel F., Burlington
 Huston, Herbert M., Ruthven
 Huston, Ross, Des Moines*
 Huston, Samuel W., Mt. Pleasant
 Hutchinson, Eleanor M., Belle Plaine
 Hyatt, Charles N., Jr., Humeston
 Hyatt, Charles N., Sr., Albia (L.M.)
 Hyndman, Olan R., Iowa City
 Ihle, Charles W., Cleghorn
 Ingham, Paul G., Mapleton
 Ingraham, David R., Sewal
 Irish, Thomas J., Forest City
 Irwin, Charles E., Woodward
 Irwin, Ralph L., Paullina
 Isenberg, Bertice A., Lohrville
 Ivins, Harry M., Cedar Rapids
 Jackson, James M., Jefferson
 Jacobsen, Robert A., Exira
 Jaenicke, Kurt, Clinton
 James, Audra D., Des Moines
 James, David W., Kamrar
 James, Lora D., Fairfield
 James, Peter E., Elkhorn
 James, Roger A., Allison
 Jameson, Robert E., Davenport
 Janse, Phillip V., Algona
 Jardine, George A., New Virginia
 Jarvis, Fred J., Jr., Iowa City
 Jarvis, Fred J., Sr., Oskaloosa
 Jarvis, Harry D., Chariton
 Jay, Leon D., Waverly
 Jeans, Philip C., Iowa City
 Jeffries, Roy R., Waukon
 Jenkins, George A., Albia
 Jenkins, George D., Burlington
 Jenkinson, Ernest A., Sioux City (L.M.)
 Jenkinson, Harry R., Iowa City
 Jensen, Arnold L., Council Bluffs
 Jensen, Arthur E., Humboldt
 Jensen, LeRoy E., Audubon
 Jepson, William, Sioux City (L.M.)
 Jerdee, Ingebrecht C., Clermont
 Jessup, Arthur E., Diagonal
 Jessup, Parke M., Muscatine
 Jinderlee, Joseph W., Cresco
 Johann, Albert E., Des Moines
 Johnson, Aaron Q., Sioux City
 Johnson, Aldis A., Council Bluffs
 Johnson, Albert P., Sigourney (L.M.)
 Johnson, Chester H., Cherokee
 Johnson, Clarence A., Moorhead
 Johnson, Frank V., Maquoketa*
 Johnson, George M., Marshalltown
 Johnson, Glenn R., Ottumwa
 Johnson, Harvey A., Atlantic
 Johnson, J. A. William, Newton
 Johnson, Jonathan, Alden
 Johnson, Mark E., Corning
 Johnson, Robert J., Iowa Falls
 Johnson, William A., Alden
 Johnston, C. Harlan, Des Moines
 Johnston, Florence D., Cedar Rapids
 Johnston, Harry L., Ames
 Johnston, Helen, Des Moines
 Johnston, Howard H., Hampton
 Johnston, Kenneth L., Oskaloosa
 Johnston, Thomas H., Spencer
 Johnston, Wayne A., Dubuque
 Johnstone, Alexander A., Keokuk
 Jones, Cecil C., Des Moines
 Jones, Charles L., Gilmore City
 Jones, Clare C., Spencer
 Jones, Harry J., Cedar Rapids
 Jones, Henry D., Schleswig
 Jones, Jesse I., Manchester
 Jones, Lewis H., Wall Lake (L.M.)
 Jones, Mark C., Boone
 Jones, Thomas S., Waukee
 Jongewaard, Albert J., Jefferson
 Jongewaard, Jeannette, Jefferson
 Jordan, Carl F., Des Moines
 Jordan, John W., Maquoketa
 Jowett, John R., Clinton
 Joynt, Albert J., Waterloo
 Joynt, Martin J., Le Mars
 Joynt, Michael F., Marcus
 Judd, Addison L., Kanawha (L.M.)
 Junger, Emil C., Soldier
 Kaack, Harry A., Clinton
 Kabrick, Ola A., Grandview
 Kadel, Merl A., Tipton
 Kalar, Sara B., Ames
 Kane, Thomas E., Boone
 Kas, Thomas D., Sutherland
 Kassmeyer, John C., Dubuque
 Kast, Donald H., Des Moines
 Katherman, Charles A., Sioux City
 Kauffman, William A., Marshalltown
 Kaufman, Cloyd E., Burlington
 Kaufman, Ernest L., Fort Atkinson
 Kaump, Donald H., Des Moines
 Keane, John L., Dyersville
 Keech, Roy K., Cedar Rapids
 Keefe, Frank M., Clinton
 Keefe, Patrick E., Sioux City
 Keen, Burlin E., Des Moines
 Keeney, George H., Mallard
 Keith, John J., Marion
 Keith, Wilfred K., Creston*
 Kelley, Edmund J., Des Moines
 Kelley, Laurence E., Des Moines
 Kellogg, Orson A., Dows
 Kelly, Dennis H., Des Moines
 Kelly, Joseph I., Burlington (L.M.)
 Kendall, Guy M., Chilhowce, Mo.
 Kenefick, John N., Algona
 Kennedy, Charles S., Logan
 Kennedy, Edward M., New Hampton
 Kennedy, Edward P., Swaledale
 Kennedy, Elizabeth S., Oelwein
 Kennedy, William C., Somers
 Kepler, Earl C., Waverly
 Kern, Lester C., Waverly
 Kerr, H. Dahney, Iowa City
 Kerr, Johnston H., Akron

- Kerr, William, Randolph
 Kerr, William H., Hamburg
 Kershner, Frank O., Clinton
 Kersten, Ernest M., Fort Dodge
 Kerwick, Joseph M., New Hampton
 Kessel, George, Cresco (L.M.)
 Kessell, James E., Des Moines
 Kessler, John B., Cedar Rapids (L.M.)
 Kestel, John L., Waterloo
 Kettelkamp, Enoch G., Monona
 Keyser, Ralph E., Marshalltown
 Kieck, Ernest G., Cedar Rapids
 Kiesau, Frederick W., Postville
 Kiesau, Milton F., Postville
 Kiesling, Harry F., Lehigh
 Kilgore, Benjamin F., Des Moines
 Kimball, John E., West Liberty
 King, David H., Batavia
 King, Dean H., Spencer
 King, Elliott R., Letts
 King, Harold N., Washington, D. C.
 King, Oran W., Des Moines
 King, Ross C., Clinton
 Kinnaman, Joseph H., Baltimore, Maryland
 Kirch, Walter A. W., Des Moines
 Kirkegaard, Smith C., Ringsted
 Kitson, Walter W., Atlantic
 Klein, John L., Muscatine (L.M.)
 Kleinberg, Henry E., Des Moines
 Kline, Samuel, Sioux City
 Kluever, Herman C., Fort Dodge
 Knight, Benjamin L., Cedar Rapids
 Knight, Edson C., Garwin
 Knight, Russell A., Rockford
 Knipe, James B., Armstrong
 Knipfer, Robert L., Jesup
 Knoll, Albert H., Dubuque
 Knopf, Eugene J., Hubbard
 Knott, Peirce D., Sioux City
 Knott, Robert C., Sioux City
 Knowles, Fred L., Fort Dodge
 Knox, James M., Cedar Rapids
 Knudsen, Hubert K., Clinton
 Kober, Augustus F., Charles City
 Koch, Fred E., Burlington
 Koch, George W., Sioux City (L.M.)
 Koeneman, Eugene O., Eldora
 Koob, William R., Brayton
 Kooiker, Herman J., Hull
 Koontz, Lyle W., Vinton
 Korfmacher, Edwin S., Grinnell
 Kornder, Louis H., Davenport
 Korns, Horace M., Iowa City
 Kottke, Elmer E., Des Moines
 Koziol, Edward S., Danbury
 Krause, Charles S., Cedar Rapids
 Krejsa, Oldrich, Cedar Rapids
 Krepelka, George E., Osage
 Kreul, Dwight G., Davenport
 Kriebs, Frank J., Elkport (L.M.)
 Kriechbaum, Horace T., Davenport
 Kriechbaum, Walter P., Burlington
 Krigsten, Joe M., Sioux City
 Kruse, Henry W., Rockford
 Kubela, Louis F., Chelsea
 Kuhl, Augustus B., Jr., Davenport
 Kuhl, Augustus B., Sr., Davenport
 Kuhn, Leo C., Decorah
 Kulp, Raymond R., Davenport
 Kunath, Carl A., San Angelo, Texas
 Kyle, William S., Washington
 Labagh, Nicholas W., Mystic
 Ladage, Leo H., Davenport
 Ladd, Fred G., Cedar Rapids
 La Force, Edward F., Burlington (L.M.)
 Laidley, Wallace G., Ogden
 Laird, John W., Mt. Pleasant
 Lall, Shiam, Des Moines
 Lamb, Frederick H., Davenport
 Lamb, Harry H., Davenport
 Lamb, Leslie, Lorimor
 Lambach, Frederick, Davenport (L.M.)
 Lambert, Avery E., Ph. D., Iowa City
 Lampe, Elmer E., Bellevue
 Lande, Jacob N., Sioux City
 Langan, Joseph C., Clinton
 Langford, William R., Epworth
 Langworthy, Henry G., Dubuque
 Lannon, James W., Clear Lake
 Lapsley, Robert M., Keokuk
 Larimer, Robert N., Sioux City
 Larsen, Elmer A., Centerville
 Larsen, Harold T., Fort Dodge
 Larsen, William W., Le Mars
 Larson, Eloise M., Iowa City
 Larson, Lester E., Decorah
 Larson, Marvin O., Alton
 Lashbrook, Elam E., Estherville
 Laughlin, Judson, Clarion
 Launder, Frank T., Garwin
 Launder, Lloyd H., Marshalltown
 Leahy, Paul E., Sioux City
 Lease, Nimrod J., Crawfordsville (L.M.)
 Lee, Frank W., Osage
 Lee, Gisle M., Thompson (L.M.)
 Lee, Harry P., Spokane, Washington
 Leehey, Florence P., Oelwein
 Leehey, Paul J., Independence
 Leffert, Frank B., Centerville
 Lehman, Emery W., Des Moines
 Leighton, Lewis L., Fort Dodge
 Leik, Donald W., Dubuque
 Leinbach, Samuel P., Belmond
 Leinfelder, Placidus J., Iowa City
 Leir, Charles N. O., Des Moines (L.M.)
 Lekwa, Alfred H., Story City
 Lenaghan, Robert T., Clinton
 Lenzmeier, Albert J., Davenport
 Leonard, Bertram B., Jr., Anthon
 Leonard, Earl R., Lake Park
 Leonard, Frederick S., Dubuque
 Lessenger, Ernest J., New London
 Lessenger, William S., Mt. Pleasant (L.M.)
 Levin, Harry M., Sioux City
 Lewis, Samuel J., Columbus Junction
 Lewis, William B., Webster City
 Lezotte, George D., Muscatine (L.M.)
 Lichter, Theodore W., Edgewood
 Lierle, Dean M., Iowa City
 Liken, John A., Creston
 Limburg, J. Irwin, Jefferson
 Limburg, John I., Jr., Jefferson
 Lincoln, Simon E., Des Moines
 Lindblom, Alton E., Lake City
 Lindemann, Erich, Boston, Mass.
 Lindsay, Vernard T., Glidden
 Link, Martha A. M., Dubuque
 Linn, Ellis G., Des Moines
 Liska, Edward J., Ute
 Little, Luther W., Atkins
 Lloyd, John M., Washington
 Lock, Arthur L., Rock Valley
 Lockhart, Harold A., Cedar Rapids
 Loeck, John F., Aurora
 Loes, Anthony M., Dubuque
 Lohman, Frederick H., Waterloo
 Lohmann, Carl J., Burlington
 Lohr, Oscar C., Churdan
 Lohr, Phillips E., Churdan
 Lomas, Willis A., Villisca
 Long, Draper L., Mason City
 Longworth, Wallace H., Boone
 Loosbrock, John F., Lacona
 Loose, David N., Maquoketa (L.M.)
 Lorfeld, Gerhard W., Davenport
 Losh, Clifford W., Des Moines
 Lott, Guy A., Osage
 Lott, Robert H., Carroll
 Lovejoy, E. Parish, Des Moines
 Lovelady, Ralph, Sidney
 Lovell, Harold W., Baltimore, Md.
 Lovett, Charles E., Lineville
 Lovett, Earl D., Vinton
 Loving, Luther W., Estherville
 Lowder, William, Maquoketa
 Luck, James V., Iowa City
 Luehrsmann, Bernard C., Dyersville
 Luehrsmann, Bernard H., Dyersville
 Luginbuhl, Christian B., Des Moines
 Luke, Edward, Coin
 Lundvick, Arthur W., Gowrie
 Luse, Ralph F., Clinton
 Luthy, Karl R., Seymour
 Lutton, John D., Sioux City
 Lynch, Robert J., Des Moines
 Lynn, Arthur R., Marshalltown
 Lynn, Clarence E., Dubuque
 Lyon, Morton, De Witt
 Lytle, Carl C., Dubuque
 MacDougal, R. F., Iowa City
 MacEwen, Ewen M., Iowa City
 Mackie, Donald G., Charles City
 Mackin, M. Charles, Clear Lake (L.M.)
 MacLeod, Hugh G., Greene
 Macrae, James G., Creston
 Madden, William D., Clinton
 Madsen, Charles C., Jr., Emerson
 Madsen, Henry V., Oakdale
 Magaret, Ernest C., Glenwood
 Magarian, Sennacherib M., Des Moines
 Magee, Emery E., Waterloo
 Magoun, Charles E., Sioux City
 Mahin, Frank M., Ainsworth
 Maiden, Sydney D., Council Bluffs
 Mailliard, Robert E., Storm Lake
 Maire, Eugene J., Vail
 Malamud, William, Iowa City
 Maloney, Arthur P., Fonda
 Maloy, Wayland H., Shenandoah
 Mansfield, Jonathan M., Clinton*
 Mantle, William B., Albion
 Mantz, Russell L., Cedar Rapids
 Maplethorpe, Charles W., Toledo
 Marble, Edwin J., Marshalltown
 Marble, Ira A., Sheffield
 Marble, Pearl L., Liscomb
 Marble, Willard P., Marshalltown
 Marek, Joseph E., Mason City
 Maresh, George, Iowa City
 Margolin, Julius M., Perry
 Maris, Cornelius, Sanborn
 Maris, Gerrit, Hull
 Maris, William, Sioux Center
 Mark, Edward M., Manilla
 Marker, John I., Davenport
 Marling, Paul F., Gladbrook
 Marquis, Fred M., Waterloo
 Marquis, George S., Des Moines
 Marr, James, Silver City
 Marsh, William E., Eldora
 Marston, Charles L., Mason City
 Martin, George H., Eagle Grove
 Martin, Hobart E., Clinton
 Martin, James W., Holstein
 Martin, John F., Latimer
 Martin, John W., Des Moines
 Martin, Loran M., Fort Dodge
 Martin, Roland F., Sioux City
 Martin, Sidney D., Carroll
 Masina, M. H., Iowa City
 Mason, Harry P., Wilton Junction
 Mason, James H., Plainfield
 Mason, Stella M., Mason City
 Masson, Hervey F., Washington
 Mast, Truman M., Washington
 Mathes, Dwight A., Jefferson*
 Matheson, John H., Des Moines
 Mathias, John P., Mediapolis (L.M.)
 Mathiasen, Henning W., Persia
 Matthews, Damon G., Milton
 Matthews, Robert J., Clarinda
 Matthey, Karl H., Davenport
 Matthey, Walter A., Davenport
 Mattison, George, Jr., Akron
 Mauer, George A., Le Mars
 Mauritz, Emory L., Des Moines
 Maxwell, Charles T., Sioux City
 Maxwell, George B., Davenport
 Maxwell, John, What Cheer
 May, George A., Des Moines
 Maynard, James H., Adair
 McAllister, James, Odebolt
 McBride, James T., Des Moines
 McBride, Robert H., Sioux City
 McBurney, George F., Belmond
 McCall, John H., Allerton
 McCarl, J. Jay, Sac City
 McCarthy, Frank D., Sioux City
 McCartney, William H., Des Moines
 McCauliff, Guy T., Webster City
 McClean, Earl D., Des Moines
 McClintock, John T., Iowa City (L.M.)
 McClure, Ernest C., Bussey (L.M.)
 McClure, Gail A., Lawrence, Kansas
 McClurg, F. Haven, Fairfield
 McConkie, Edwin D., Cedar Rapids
 McConkie, Willis L., Carroll

- McConnaughey, James T., Mt. Pleasant
 McCoy, Harold J., Des Moines
 McCrary, Warren E., Lake City
 McCrae, Eppie S., Eddyville
 McCreedy, Murry L., Brighton
 McCreery, John W., Whittemore
 McCreight, George C., Des Moines
 McCuiston, Harry M., Sioux City
 McCullough, Gilbert F., Davenport
 McCutchan, Guy R., Council Bluffs
 McDannell, John, Nashua
 McDonald, Donald J., Des Moines
 McDonald, James E., Mason City (L.M.)
 McDowell, Gilbert T., Gladbrook
 McDowell, William O., Grundy Center
 McElderry, Donald, Ottumwa
 McEwen, Earle, Mason City (L.M.)
 McFarland, Guy E., Jr., Ames
 McFarland, Guy E., Sr., Ames
 McFarland, Julian E., Iowa City
 McGilvra, Raymond I., Guthrie Center
 McGowan, James P., Harlan
 McGrane, Merle J., New Hampton
 McGrath, William J., Elkader
 McGready, Joseph H., Independence (L.M.)
 McGuire, Clarence A., Dubuque
 McGuire, Roy A., Fairfield
 McHugh, Charles P., Sioux City
 McKean, Alexander C., Ladora
 McKee, Thomas L., Keokuk
 McKirahan, Josiah R., Wayland
 McKirdie, Matthew, Iowa City
 McKitterick, John C., Burlington
 McLaughlin, Charles W., Washington
 McLaughlin, Lucius E., Cedar Rapids*
 McMahon, George T., Wauke
 McMahon, Thomas, Garner (L.M.)
 McManus, Joseph P., Graettinger
 McManus, Thomas U., Waterloo (L.M.)
 McMeans, Thomas W., Davenport
 McMillan, Edwin C., Hudson
 McMillen, Arch S., Fort Dodge
 McMurray, Edward A., Newton
 McNamara, Frank P., Dubuque
 McNamee, Jesse H., Des Moines
 McNaughton, Luther D., Eagle Grove
 McPherrin, Henry I., Des Moines
 McQuillen, Charles W., Charles City
 McQuiston, J. Stuart, Cedar Rapids
 McVay, Melvin J., Lake City
 Mead, Frank N., Cedar Falls (L.M.)
 Meany, John F., Rockwell
 Neentz, Diedrich J., Fort Madison
 Meffert, Clyde B., Cedar Rapids
 Meggers, Edward C., McGregor
 Mehler, Frank R., New London
 Melgaard, Bennett A., Sioux City
 Mellen, Robert G., Clinton
 Mengert, William F., Iowa City
 Mercer, Clifford D., West Union
 Meredith, Loren K., Des Moines
 Mereness, Herbert D., Dolliver
 Merkel, Arthur E., Des Moines
 Merkel, Byron M., Des Moines
 Merrick, John H., Cherokee
 Merrill, Charles H., Oskaloosa
 Merrill, Nelson, Marshalltown
 Merritt, Arthur M., Des Moines
 Mershon, Clinton E., Adel (L.M.)
 Meyer, Alfred K., Clinton
 Meyer, George R., Marshalltown (L.M.)
 Meyer, Milo G., Marshalltown
 Meyers, Frank W., Dubuque
 Meyers, Henry A., Davenport
 Michel, Bernard A., Dubuque
 Middleton, George M., Davenport
 Miller, Brownlow B., Tabor
 Miller, Bird H., Blockton (L.M.)
 Miller, Charles W., Preston
 Miller, Chester I., Iowa City
 Miller, Donald F., Williamsburg
 Miller, Enos D., Wellman
 Miller, Johannes J., Ackley
 Miller, Lawrence A., North English
 Miller, Oscar H., Estherville
 Miller, Temple M., Muscatine
 Millice, Glenn B., Battle Creek
 Mills, Ernest M., LeGrand
 Mills, Frank W., Ottumwa
 Minassian, Harootune A., Des Moines
 Minassian, Thaddeus A., Des Moines
 Miner, James B., Jr., Charles City
 Miner, James B., Sr., Charles City
 Minkel, Roger M., Swea City
 Missman, Walter F., Klemme
 Mitchell, Claire H., Indianola
 Moen, Harry P., West Union
 Moen, Stanley T., Hartley
 Moerke, Albert C., Burlington (L.M.)
 Moerke, Robert F., Burlington
 Moershel, Henry G., Homestead
 Moes, Matthew J., Dubuque
 Mol, Henry L., Grundy Center
 Montgomery, Earl C., Atlantic
 Montgomery, Edward S., Grant
 Montgomery, Guy E., Keota
 Montz, Fred, Lowden
 Moon, Barclay J., Cedar Rapids
 Moore, Daniel V., Sioux City
 Moore, Edwin A., Harlan
 Moore, Fred, Des Moines
 Moore, Gage C., Ottumwa
 Moore, Harold H., Ottumwa
 Moore, Jesse C., Eldon
 Moore, Morris, Walnut
 Moore, Pauline V., Iowa City
 Moore, Walter N., West Branch*
 Moorehead, Giles C., Ida Grove (L.M.)
 Moorehead, Harold B., Underwood
 Moran, Thomas A., Melrose
 Morden, Richard P., Des Moines
 Morden, Roy R., Des Moines
 Morgan, Earl E., Sioux City
 Morgan, Fred B., Clinton
 Morgan, Harold W., Mason City
 Morgenthaler, Otis P., Templeton
 Morris, Zenella N., Stockport
 Morrison, Edward D., Fort Dodge
 Morrison, John R., Carroll
 Morrison, John W., Alta
 Morrison, Orry C., Carroll
 Morrison, Roland B., Carroll
 Morrison, Wesley J., Cedar Rapids
 Morse, Charles H., Eagle Grove (L.M.)
 Morton, Matthew T., Estherville
 Moskovitz, Julius M., Council Bluffs
 Mott, William H., Farmington
 Moulton, Milo W., Bellevue
 Mountain, Elmer B., Des Moines
 Mueller, Byron I., St. Charles
 Mueller, Emil F., Dyersville
 Mueller, James A., Fenton
 Mueller, John J., Dubuque
 Muench, Virgil O., Nichols
 Muhs, Emil O., Muscatine
 Mullmann, Arnold J., Adel
 Mulsow, Frederick W., Cedar Rapids
 Mumma, Claude S., Des Moines
 Munden, Ralph E., Cedar Rapids
 Munger, Elbert E., Jr., Spencer
 Munger, Elbert E., Sr., Spencer
 Murchison, Kenneth, Sidney
 Murphey, Arlo L., Fredericksburg
 Murphy, Cornelius B., Alton
 Murphy, George C., Waterloo
 Murphy, Joseph J., Cedar Rapids
 Murray, Frederick G., Cedar Rapids
 Murtaugh, James E., Charles City
 Myers, Edward M., Boone
 Myers, Judson W., Postville
 Myers, Kermit W., Sheldon
 Naae, Thorleif T., Graettinger
 Nash, Edwin A., Dike
 Neal, Emma J., Cedar Rapids
 Nederhiser, Morgan I., Cascade
 Needles, Roscoe M., Anita
 Negus, Cora W., Keosauk
 Nelson, Arnold L., Des Moines
 Nelson, Harold C., Red Oak
 Nelson, Caryl L., Waterloo
 Nelson, Fred L., Ottumwa
 Nelson, Harry E., Dayton
 Nelson, Ira D., Toledo
 Nelson, Paul O., Emmetsburg
 Nelson, Robert J., Clinton
 Nesler, Alfred B., Dubuque
 Netolicky, Joseph Y., Solon
 Netolicky, Robert Y., Cedar Rapids
 Netolicky, Wesley J., Cedar Rapids
 Neu, Harold N., Sac City
 Neufeld, Frank, Davenport
 Neuzil, William J., Cedar Rapids
 Neveln, Lowell C., Liberty Center
 Newell, William C., Ottumwa
 Newland, Don H., Belle Plaine
 Newland, Elmer R., Drakesville
 Newland, Mark A., Center Point
 Newlove, Frank E., Battle Creek
 Newton, Dennis L., Fort Madison
 Niblock, George F., Derby
 Nicholson, Clyde G., Spirit Lake
 Nicol, Charles A., Panora
 Nicol, David T., Mitchellville
 Nielsen, Rudolph F., Cedar Falls
 Nielsen, Arthur L., Harlan
 Nierling, Paul A., Cresco
 Noble, Earl H., Clemons
 Noble, Frederick W., Fort Madison
 Noble, Harold F., Fort Madison
 Noble, Lloyd E., Rhodes
 Noble, Nelle S., Des Moines
 Noble, Rusl P., Cherokee
 Noe, Carl A., Cedar Rapids
 Noe, Charles F., Amana (L.M.)
 Nomland, Ruben, Iowa City
 Noonan, James J., Marshalltown
 Norem, Walter, Muscatine
 North, Frank R., Winfield
 Norton, Alva C., Rockwell City (L.M.)
 Noun, Maurice H., Des Moines
 Nourse, Leslie M., Des Moines
 Nowak, Edward C., New Hampton
 Nyquist, David M., Eldora
 Nysewander, Christian, Des Moines (L.M.)
 Ober, Frank G., Burlington
 Obermann, Charles F., Cherokee
 O'Brien, Cecil S., Iowa City
 O'Brien, Stephen A., Mason City
 O'Connor, Edwin C., Alta Vista
 Odell, Isaac H., Des Moines
 O'Donoghue, Arch F., Sioux City
 O'Donoghue, James H., Storm Lake
 Oelrich, Carl D., Sioux Center
 Oggel, Herman D., Maurice
 O'Keefe, John E., Waterloo (L.M.)
 O'Keefe, Matthew E., Council Bluffs
 O'Keefe, Paul T., Waterloo
 Oldag, George C., Paulina
 O'Leary, Francis B., George
 Olsen, Martin I., Des Moines
 Olson, Evelyn M., Winterset
 Olson, Paul F., Dubuque
 Olson, Russell L., Northwood
 Olson, William E., Des Moines
 Osborn, Clarence R., Dexter
 Osnes, Elias N., Readlyn
 O'Toole, Laurence C., Le Mars
 O'Toole, Roger L., Marshalltown
 O'Toole, Thomas J., Eagle Grove
 Ott, Martin D., Davenport
 Otto, Paul, Fort Dodge
 Overton, Lewis M., Des Moines
 Owen, William E., Cedar Rapids
 Owen, William R., Osage
 Pace, Arthur A., Toledo (L.M.)
 Padgham, James B., Ocheyedan
 Padgham, John T., Grinnell
 Page, Addison C., Des Moines (L.M.)
 Pagelson, Otto H., Iowa Falls
 Pahlas, Henry M., Dubuque
 Paige, Ralph T., La Porte City
 Painter, Jesse C., Dubuque
 Paisley, Alfred M., Keokuk
 Palmer, Carson W., Guttenberg
 Paragas, Modesto R., Creston
 Parish, John R., Grinnell
 Parish, Ora F., Grinnell (L.M.)
 Park, Elmer R., Sioux City
 Parker, Bernard B., Centerville
 Parker, Edward S., Ida Grove (L.M.)
 Parker, George F., Iowa City
 Parker, James D., Fayette
 Parker, Robert L., Des Moines
 Parker, William W., Floris
 Parry, Roy E., Scranton
 Parsons, Harry C., Grinnell
 Parsons, Irving U., Malvern (L.M.)

- Parsons, John C., Des Moines
 Parsons, Percival L., Traer
 Paschal, George A., Williams
 Pascoe, Paul L., Carroll
 Patterson, Alpheus W., Fonda
 Patterson, Charles L., Westside
 Patterson, James C., Marengo
 Patterson, John N., Burlington (L.M.)
 Patterson, Roy A., Webster City
 Paul, John D., Anamosa
 Paulsen, Herbert B., Harris
 Paulus, Edward W., Iowa City
 Payne, Rosewell H., Exira
 Pearson, George J., Burlington
 Pearson, William W., Des Moines
 Peart, John C., Dixon
 Pease, Francis W., Keokuk
 Pease, Herbert, Blairsburg
 Peasley, Harold R., Des Moines
 Peck, John H., Oakdale
 Peck, Raymond E., Davenport
 Peek, Levin H., Cherokee
 Peisen, Conan J., Des Moines
 Pence, James W., Columbus Junction
 Peoples, Horace R., Burlington (L.M.)
 Peppers, Austin W., Oakville
 Perkins, Franklyn C., Hedrick
 Perkins, Rolla W., Sioux City
 Perley, Arthur E., Waterloo
 Pershing, Frank O., Keota
 Peschau, Waldo E., Cedar Rapids
 Peters, Fletcher E., Defiance
 Petersen, Emil C., Atlantic
 Petersen, Millard T., Atlantic
 Peterson, August J., Forest City
 Peterson, Evan A., Burlington
 Peterson, Frank R., Iowa City
 Peterson, Ray W., Clear Lake
 Peterson, Vernon W., Iowa City
 Petrovitsky, John C., Cedar Rapids
 Petty, Wallace S., Sioux City
 Pfaff, Richard O., Des Moines
 Pfeiffer, Eric P., Sigourney
 Pfeiffer, Ernst, Hartley
 Pfeiffer, Harry E., Cedar Rapids
 Pfohl, Anthony C., Dubuque
 Phillips, Albin B., Clear Lake (L.M.)
 Phillips, Clarence P., Muscatine
 Phillips, Isaac H., Missouri Valley
 Phillips, Jesse H., Montezuma (L.M.)
 Phillips, Norman W., Clear Lake (L.M.)
 Phillips, Walter B., Davenport
 Pickard, John C., Dubuque
 Pickenbrock, Frank J., Dubuque
 Piercy, Kenneth C., Maxwell
 Pierson, Lawrence E., Sioux City
 Plankers, Arthur G., Dubuque
 Plant, Oscar H., Iowa City
 Plass, Everett D., Iowa City
 Plummer, George A., Cresco
 Plummer, Herbert W., Lime Springs
 Poepsel, Frank L., West Point
 Pollock, Roscoe, Douds-Leando
 Pope, John M., Cherokee
 Porath, William C., Storm Lake
 Porstmann, Louis J., Davenport
 Porter, Charles E., Redfield
 Porter, Clarence M., Woodward
 Porter, Robert J., Des Moines
 Porter, Samuel D., Grinnell
 Posner, Edward R., Des Moines (L.M.)
 Potter, William, Galt
 Powell, Burk, Albia (L.M.)
 Powell, Lester D., Des Moines
 Powell, Robert A., Farragut
 Powell, Velura E., Red Oak
 Powers, Francis E., Boone
 Powers, Fred W., Waterloo (L.M.)
 Powers, Henry R., Emmetsburg
 Powers, Ivan R., Waterloo
 Powers, Joseph C., Hampton
 Preece, Wade O., Waterloo
 Prentice, George L., Packwood
 Presnell, William H., Charlotte
 Prettyman, Oscar R., Manson
 Prewitt, Leland H., Ottumwa
 Price, Alfred S., Des Moines
 Priessman, Frank A., Keokuk
 Priestley, Joseph B., Des Moines
 Pringle, Jesse A., Bagley (L.M.)
 Proctor, Rothwell D., Cedar Rapids
 Prouty, James V., Cedar Rapids
 Purcell, Bert E., Iowa Falls
 Purdy, William O., Des Moines
 Putnam, Chester L., Holstein
 Quinn, Francis P., Dubuque
 Ralston, Furman P., Knoxville
 Rambo, Cyrus C., Creston
 Rambo, David T., Ottumwa
 Rambo, Eli F., Webster City
 Randall, John H., Iowa City
 Randall, William L., Hampton
 Rankin, Isom A., Iowa City
 Rankin, John R., Keokuk
 Rankin, William, Keokuk
 Ransom, Harry E., Des Moines
 Rarick, Ivan H., Eagle Grove
 Rater, David L., Ottumwa
 Rathe, Herbert W., Waverly
 Ravitts, Joseph L., Montezuma
 Raw, Elmer J., Pierson
 Redmond, Thomas M., Monticello
 Redmond, William H., Cedar Rapids
 Reed, Andrew I., Estherville
 Reed, Charles S., Agency
 Reed, Guy P., Davis City (L.M.)
 Reed, Lloyd T., Gravity
 Reed, Paul A., Iowa City
 Reed, Purl E., Council Bluffs
 Reed, Roe B., Clearfield
 Reeder, James E., Sioux City
 Reiley, William S., Red Oak
 Reimers, Robert S., Fort Madison
 Reinicke, Edward L., Dubuque (L.M.)
 Reinsch, Frank, Ashton
 Reiter, Alfred E., Melcher
 Render, Norman D., Iowa City
 Rendleman, William H., Davenport
 Reuber, Roy N., Mason City
 Reuling, Frank H., Waterloo
 Reynolds, Albert C., Mingo
 Reynolds, Earl O., Greenfield
 Rice, Floyd W., Des Moines
 Richards, Frank O., Winterset
 Richardson, Leon F., Collins
 Richmond, Arthur C., Fort Madison
 Richmond, Frank R., Fort Madison
 Richmond, Paul C., New Hampton
 Ridenour, Joseph E., Waterloo
 Riegelman, Ralph H., Des Moines
 Riggert, Leonard O., Clinton
 Riggie, Frank P., Lamont
 Riley, John, Exira (L.M.)
 Rimel, George W., Bedford
 Ringena, Engelke J., Brooklyn
 Rinker, George E., Oto
 Risk, Howard, Oelwein
 Ristine, James O., Maquoketa
 Ristine, Leonard P., Mt. Pleasant
 Ritter, John F., Maquoketa
 Roark, George L., Tabor*
 Robb, James B., Chariton
 Robbins, Jesse H., Sioux City*
 Roberts, Brockway D., Wayland
 Roberts, Francis L., Spirit Lake
 Roberts, Francis M., Knoxville
 Robertson, Andrew A., Council Bluffs
 Robertson, Treadwell A., West Liberty
 Robinson, John B., Mt. Vernon (L.M.)*
 Robinson, Robert E., Waverly
 Robinson, Van C., Des Moines
 Rock, John E., Davenport
 Rodawig, Donald F., Spirit Lake
 Rodemeyer, Frederick H., Sheffield
 Roder, Carl F., Dumont
 Roe, Cullen B., Afton
 Rogers, Claude B., Earlville
 Rogers, Marion W., Leon
 Rohlf, Edward L., Waterloo (L.M.)
 Rohlf, William A., Waverly (L.M.)
 Rohner, Frank J., Iowa City
 Rohwer, Roland T., Sioux City
 Rolfs, Floyd O., Parkersburg
 Rolfs, Fred A., Aplington
 Rominger, Clark R., Cresco
 Roost, Frederick H., Sioux City
 Rose, Alvin A., Story City
 Rose, Joseph E., Grundy Center
 Rosebrook, Lee E., Ames
 Ross, Arthur J., Perry (L.M.)
 Rotkow, Maurice J., Des Moines
 Rowan, Charles J., South Laguna, Calif.
 Rowat, Harry H., Des Moines
 Rowley, William G., Sioux City
 Rowse, Robert Q., Sioux City
 Royal, Lester A., West Liberty
 Royal, Malcolm A., Des Moines
 Ruml, Wentzle, Cedar Rapids
 Rusk, Lester D., Sioux City
 Russ, Jesse E., Rake
 Russell, Charles R., Keosauqua
 Russell, Edmund D., Fort Dodge
 Russell, Elwood P., Iowa City
 Russell, John, Des Moines
 Russell, Ralph E., Waterloo
 Rust, Emery A., Webb
 Ruth, Verl A., Des Moines
 Ryan, George C., Maquoketa
 Ryan, Granville N., Des Moines (L.M.)
 Ryan, John C., Des Moines
 Ryan, Martin J., Sioux City
 Saar, Jesse L., Donnellson
 Safley, Agnes I., Cedar Rapids
 Sage, Erwin C., Burlington
 Saks, Adolph L., Boston, Mass.
 St. Onge, Joseph A., Sioux City
 Sala, Ono P., Davenport
 Sampson, Carl E., Creston
 Sampson, Frank E., Creston (L.M.)
 Sams, Joseph H., Clarion (L.M.)
 Samuelson, Carl A., Sheldon
 Sanders, George E., Des Moines
 Sanders, Matthew G., Fort Dodge
 Sanders, William E., Des Moines
 Sarff, Floyd G., Logan
 Sawyer, Grace M., Woodward
 Sawyer, Prince E., Sioux City
 Saylor, Harley L., Des Moines (L.M.)
 Sayre, Ivan K., St. Charles
 Scales, Emmet T., Des Moines
 Scanlan, George C., De Witt
 Scanlan, Maurice, De Witt
 Scanlon, George H., Iowa City
 Scannell, Raymond C., Carroll
 Schadt, Frederick C., Williamsburg
 Schafer, Paul H., Burlington
 Schanche, Arthur N., Ames
 Scharle, Theodore, Dubuque
 Scheele, Matthias H., Dubuque
 Schenk, Erwin, Des Moines
 Schermerhorn, Grace C., Clinton
 Schifferle, Edward, Creston (L.M.)*
 Schilling, Nicholas, New Hampton
 Schmidt, Bernhard H., Davenport (L.M.)
 Schmitt, Robert W., Scranton
 Schmitz, Henry C., Des Moines
 Schnug, George E., Dows
 Schoon, Harold W., Sibley
 Schroeder, Adrian J., Marshalltown
 Schroeder, Leslie V., Walcott
 Schrup, Joseph H., Dubuque (L.M.)
 Schultz, Albert A., Fort Dodge
 Schultz, Ivan T., Humboldt
 Schultz, Nelle E. T., Humboldt
 Schultz, Walter H., Schleswig
 Schwartz, John W., Sioux City
 Scott, Homer W., Fort Dodge
 Scott, Philip A., Spirit Lake
 Scott, Sophie H., Des Moines (L.M.)
 Scott, Walter, Sioux City
 Scott, Walter E., Adel (L.M.)
 Scruby, Leone M., Des Moines
 Seabloom, John L., Red Oak
 Seaman, Charles R., Mt. Ayr
 Sebern, Richard C., Fort Dodge
 Secoy, Frank L., Sioux City
 Sedlacek, Leo B., Cedar Rapids
 Seibert, Cecil W., Waterloo
 Seidler, William A., Jamaica (L.M.)
 Seiler, Raymond M., Blairtown
 Sellards, Joseph W., Clarinda
 Sells, Benjamin B., Independence
 Sells, Frank W., Osceola
 Selman, Ralph J., Ottumwa
 Senska, Frank R., Brandon
 Senty, Elmer G., Davenport
 Severson, George J., Slater

Shafer, Lee E., Davenport
 Shane, Robert S., Pilot Mound
 Shannon, Edwin R., Waterloo
 Sharon, James P., Des Moines
 Shaw, Albert E., Des Moines
 Shaw, David F., Britt
 Shaw, Ernest E., Indianola
 Shaw, Mathew M., Madrid
 Sheafe, Edward A., Ottumwa*
 Shellito, Amos G., Independence (L.M.)
 Shelton, Charles D., Bloomfield
 Sherman, Ellen A., McGregor (L.M.)
 Sherman, Elmer E., Keosauqua
 Sherman, Richard C., Farley
 Shipley, John H., Rippey (L.M.)
 Shirley, Hale F., Iowa City
 Shively, Jay D., Osceola
 Shonka, Thomas E., Malvern
 Shope, Charles D., Terril
 Shorey, Joseph R., Davenport
 Shrader, John C., Fort Dodge
 Shulkin, Samuel H., Sioux City
 Shumate, C. Frank, Miles
 Sibley, Samuel E., Sioux City
 Sievers, Claudius L., Denison
 Sigworth, Fred B., Anamosa
 Simeral, Fred E., Brooklyn
 Simmons, Ralph R., Des Moines
 Sinn, Irvin J., Williamsburg
 Sinning, Augustus, Iowa City
 Sinning, John E., Melbourne
 Skallerup, Walter M., Walker
 Skelley, William F., Davenport
 Skinner, Frank S., Marion
 Slater, Ernest W., Jewell
 Slavin, Charles T., Moravia
 Small, William B., Waterloo (L.M.)
 Smead, Leslie L., Newton
 Smiley, Ralph E., Mason City
 Smillie, Benjamin A., Gilmore City*
 Smith, Arthur F., Manning
 Smith, Albert R., Iowa City
 Smith, C. Colfax, Clarksville
 Smith, Cecil R., Onslow
 Smith, Channing G., Granger
 Smith, Elmer M., State Center
 Smith, Eugene E., Waterloo
 Smith, Ferdinand J. E., Milford (L.M.)
 Smith, Frank L., Newton
 Smith, Frank S., Nevada (L.M.)
 Smith, Frank W., Red Oak
 Smith, Franklin C., Mt. Ayr
 Smith, Fred M., Iowa City
 Smith, Harold F., Iowa City
 Smith, Harry P., Iowa City
 Smith, Herman J., Des Moines
 Smith, Homer A., Correctionville
 Smith, Howard W., Woodward
 Smith, Jason N., Iowa City
 Smith, Lawrence D., Des Moines
 Smith, Rex I., Waterloo
 Smith, Robert T., Granger
 Smith, Roscoe D., Clarinda
 Smith, Sidney D., Waterloo
 Smith, Thomas T., Shelby
 Smouse, David W., Los Angeles, California (L.M.)
 Smouse, William O., Des Moines
 Smrha, James A., Cedar Rapids
 Snidow, Francis A., El Paso, Texas
 Snitkay, Carl J., Belle Plaine
 Snodgrass, Ralph W., Des Moines
 Snyder, Dean C., DeWitt
 Snyder, Glen E., Grimes
 Snyder, John A., Roland
 Snyder, Raleigh R., Des Moines
 Soe, Peder, Kimballton
 Sokol, John M., Spencer
 Sollenbarger, George H., Corydon
 Sollis, Delmar B., Chariton
 Somers, Pearl E., Grinnell (L.M.)
 Sones, Clement A., Des Moines
 Sorensen, Elmer M., Red Oak
 Sorensen, Regnar M., Le Mars
 Sorensen, Aral C., Davenport
 Sorenson, Kermit R., Sabula
 Soucek, Adolph, Cherokee
 Southwick, William W., Marshalltown
 Spain, Robert T., Conrad

Sparks, Francis R., Waverly (L.M.)
 Spaulding, Homer L., Ankeny
 Spear, William M., Oakdale
 Speidel, Glenn P., Jackson, Miss.
 Spellman, Martin T., Cedar Rapids
 Sperow, Wendell B., Nevada
 Sperow, William E., Carlisle
 Spilman, Harold A., Ottumwa
 Spilman, Smith A., Ottumwa (L.M.)
 Spinharney, Lester J., Cherokee
 Sporre, Knute A., Rock Rapids
 Sproul, William M., Des Moines
 Stabo, Trond N., Decorah (L.M.)
 Stafford, James F., Lovilia
 Stageman, John F., Council Bluffs
 Stahr, Roland W., Fort Dodge
 Stalford, John H., Sac City (L.M.)
 Stam, Nicholas C., Mason City
 Standefer, Joe M., Tama
 Standeven, John F., Oakland
 Stansbury, John E., Cedar Rapids
 Stark, Callistus H., Cedar Rapids
 Starr, Charles F., Mason City
 Starry, Allen C., Sioux City
 Stauch, Martin O., Whiting
 Staudt, Alfred J., Waterloo
 Stech, Joseph L., Council Bluffs
 Steele, George H., Belmond
 Steelsmith, Frank R., Des Moines
 Stegman, Jacob J., Marshalltown
 Steindler, Arthur, Iowa City
 Stephen, Paul, Des Moines
 Stephen, Raymond J., Cedar Rapids
 Stepp, James K., Manchester
 Sterling, Allen F., Norway
 Sternagel, Fred, West Des Moines
 Sternberg, Walter A., Mt. Pleasant (L.M.)
 Sternhill, Isaac, Council Bluffs
 Stevens, Franklin A., Belmond (L.M.)
 Stevens, Harry L., Ottumwa
 Stevenson, Eber F., Waterloo (L.M.)
 Stevenson, William W., Rockwell City
 Stewart, Alexander P., Inwood
 Stewart, Charles E., Palmer
 Stewart, Robert A., Independence
 Stewart, William L., Mediapolis
 Stinson, Alice C., Estherville
 Stoakes, Charles S., Lime Springs
 Stober, Raymond W., Charles City
 Stodden, Frank J., Sioux City
 Stoecks, William A., Davenport
 Stolley, Jordan G., Moline
 Stone, James G., Bloomfield
 Stone, Roy D., Sully
 Stookey, Calvin G., Mechanicsville
 Strawn, John T., Des Moines
 Stribble, Harry A., Dubuque
 Strohbehn, Edward F., Davenport
 Strosnider, Homer O., Keokuk
 Stroy, Herbert E., Osceola
 Struble, Gilbert C., Ottumwa
 Struck, Kuno H., Davenport
 Stuart, Percy E., Nashua
 Stuckart, Theodore, Dubuque
 Studebaker, John F., Fort Dodge
 Studebaker, Leland F., Fort Dodge
 Stutsman, Eli E., Washington
 Suchomel, Thomas F., Cedar Rapids
 Sugg, Herbert R., Clinton
 Sullivan, Lawrence F., Donahue
 Sult, William F., Gilman
 Sunderhuch, John H., Davenport
 Swab, Charles C., Cedar Rapids
 Swallum, James A., Storm Lake
 Swallum, Troy W., Spencer
 Swanson, John E., Sioux City
 Swearingen, Guy H., Sac City
 Swift, Charles H., Jr., Marcus
 Swift, Frederick J., Marshalltown
 Swinney, Roy G., Richland
 Sybenga, Jacob J., Pella
 Synhorst, John B., Des Moines
 Sywassink, George A., Muscatine
 Tait, John H., Des Moines
 Talbott, Eugene F., Grinnell (L.M.)
 Talley, Louis F., Marshalltown
 Tamisica, Francis X., Missouri Valley
 Tamisica, John L., Missouri Valley
 Tandy, Roy W., Morning Sun

Taylor, Charles I., Pomeroy
 Taylor, Edward D., Davenport (L.M.)
 Taylor, John L., Montezuma
 Taylor, Lawrence A., Ottumwa
 Taylor, Maude, Ottumwa
 Taylor, Robert S., Davenport
 Terrall, John J., Cedar Rapids
 Terrill, Jay S., Bedford
 Teufel, John C., Davenport
 Tharp, Herbert M., Monroe
 Thatcher, Wilbur C., Fort Dodge
 Thein, Garfield M., Oelwein
 Theisen, Roy I., Dubuque
 Thielen, Edward W., Waterloo
 Thiel, Michael H., Grundy Center
 Thierman, Edward J., Cedar Falls
 Thomas, Clarence I., Guthrie Center
 Thomas, Clifford W., Forest City
 Thomas, Clyde E., Keystone
 Thomas, Colin G., Monticello
 Thomas, Louis A., Red Oak
 Thomas, William H., McGregor
 Thompson, Gilbert N., Jesup
 Thompson, Harry F., Forest City (L.M.)
 Thompson, Howard E., Dubuque
 Thompson, Ira F., Donnellson
 Thompson, James R., Waterloo
 Thompson, Kenneth L., Oakland
 Thompson, William H., Winterset (L.M.)
 Thompson, William L., Bayard (L.M.)
 Thoms, Adolph N., Cedar Falls
 Thomsen, Thomas F., Red Oak
 Thomson, John A., Sioux City
 Thorburn, Orval L., Ames
 Thornburg, William V., Guthrie Center
 Thornell, Joseph B., Council Bluffs
 Thornton, James W., Livermore, Calif.
 Thornton, John W., Lansing
 Thornton, Thomas F., Waterloo
 Thorson, John A., Dubuque
 Throckmorton, James F., Des Moines
 Throckmorton, Jeannette Dean, Des Moines
 Throckmorton, Robert F., Des Moines (L.M.)
 Throckmorton, Scott L., Chariton
 Throckmorton, Tom B., Des Moines
 Throckmorton, Tom M., Chariton (L.M.)
 Tice, Claude B., Mason City
 Tidball, Charles W., Independence
 Tilden, William C., Stanwood
 Tinley, Mary L., Council Bluffs
 Tinley, Mathew A., Council Bluffs
 Tinsman, Eugene, Orient
 Titus, Elton L., Iowa City
 Tolliver, Hillard A., Charles City
 Tombaugh, Frank M., Burlington (L.M.)
 Tompkins, Erle D., Clarion
 Toubes, Abraham A., Des Moines
 Tracy, John S., Sioux City
 Traister, John E., Eddyville
 Trey, Bernhard L., Marshalltown
 Treynor, Jack V., Council Bluffs
 Treynor, Vernon L., Council Bluffs
 Tripp, Leroy R., Sioux City
 Trotter, William M., Ames
 Trueblood, Clare A., Indianola
 Trumbo, J. O., Winfield
 Tucker, Warren W., Iowa City
 Turner, George E., Des Moines
 Turner, William R., Fort Dodge
 Tyler, Charles W., Polk City
 Tyler, Edward K., Muscatine (L.M.)
 Tyrrell, Joseph W., Des Moines (L.M.)
 Unger, David, Des Moines
 Updegraff, Charles L., Boone
 Valiquette, Frank G., Sioux City
 Van Ausdall, Garrett M., New London (L.M.)
 Van Besien, George J., Painesburg
 Van Camp, Thomas H., Breda
 Vander Meulen, Herman C., Pella
 Vander Veer, Frank L., Blue Grass
 Vander Wilt, Walter, Rock Rapids
 Van Duzer, William R., Casey
 Van Epps, Clarence E., Iowa City
 Vangeness, Ingmar U., Sioux City
 Van Metre, Edward J., Tipton
 Van Metre, Paul W., Rockwell City
 Van Ness, Charles S., Peterson

- Van Tiger, William H., Eldora
 Van Winkle, Howard L., Cedar Rapids
 Veldhouse, Richard H., Cedar Rapids
 Veltman, John F., Winterset
 Venable, George L., New Sharon
 Vermeer, Gerritt E., Sheldon
 Vesterborg, Peder H., Forest City (L.M.)
 Victorine, Edward M., Cedar Rapids
 Vineyard, Thomas L., Dow City
 Vinson, Harry W., Ottumwa
 Voigt, Ernest J., Burlington
 Vollmer, Karl, Davenport
 Von Lackum, Herman J., Dysart (L.M.)
 Von Lackum, John K., Cedar Rapids
 Vorpahl, Rudolph A., Cedar Rapids
 Voss, Otto R., Davenport
 Waddell, Jesse C., Paton
 Waggoner, Charles V., Clinton
 Wagner, James A., Primghar
 Wagner, William C., Traer (L.M.)
 Wahrer, Frederick L., Marshalltown
 Wailes, John W., Davis City (L.M.)
 Wakeman, Allie H., Fort Dodge
 Walk, Frederick D., South English
 Walker, Benjamin S., Corydon
 Walker, Charles C., Des Moines
 Walker, Claude M., Kellerton
 Walker, Evon, Ottumwa
 Walker, Harry L., Cedar Rapids
 Walker, Herbert P., Clarion
 Walker, John M., Dubuque
 Walker, Thomas G., Riceville
 Walker, Thomas S., Riceville
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The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, IOWA, AUGUST, 1938

No. 8

DISEASES ASSOCIATED WITH CHARACTERISTIC CHANGES IN THE RED BLOOD CELLS—THE MICROCYTIC AND MACROCYTIC ANEMIAS*†

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For many years it was customary to divide all forms of anemia into the so-called primary and secondary types. The former group, of which pernicious anemia is an example, included all those anemias of unknown etiology which had a high color index, whereas the latter type had a low color index, and was characterized by a known etiology, of which chronic hemorrhage was most common. Such a classification is now neither accurate nor adequate since increased knowledge which has been accumulated, especially in the past decade, no longer submits to such an elementary arrangement. There are many discrepancies in both main divisions. For example, certain anemias of known etiology, as those associated with myxedema, secondary aplastic anemia and others, do not fit into the early classification because they have a high color index. Even true Addisonian pernicious anemia, which for many years was regarded as the classical example of a so-called primary anemia because it had a high color index and was of unknown etiology, is now on the verge of failing to conform to such classification; recent fundamental studies bearing on its etiology indicate that such a condition develops as a consequence of some primary change in the stomach to which the anemia is secondary. Furthermore, certain anemias, previously classified as primary in nature, can no longer be said to conform to the essential criteria of such a group. For example, chlorosis many years ago was regarded as a primary anemia although even then it was recognized as an anemia with a low color index and it is now known that its cause

is an inadequate supply of available iron in the body.

If the old classification is discarded, it becomes necessary to accept a new one which more completely meets the needs of the present knowledge concerning the anemias. In a general way, this has been accomplished by a division of all such disorders into the microcytic and macrocytic types. While there are exceptions, a great majority of the anemias which are encountered in a physician's practice fall into one or the other of these two groups. Such a division is helpful because it includes almost all of the commonly encountered anemias and recognizes the significance of the most important etiologic agents, thereby suggesting the proper therapy. Furthermore, it is possible by relatively simple and accurate laboratory procedures, to recognize promptly the classification in which any given anemia belongs.

A microcytic anemia is one in which there is an increase in the number of red blood cells having a diameter which is less than normal and a mean corpuscular volume below 96 cubic microns. The color index is characteristically less than 1.0 which indicates that the reduction of the hemoglobin is relatively greater than the diminution in the number of red blood cells. This condition is most frequently associated with a reduction of the iron reserves of the body which results in an inability to synthesize hemoglobin in normal amounts. Frequently there is a favorable therapeutic response to the administration of iron but improvement rarely follows anti-pernicious anemia therapy.

A macrocytic anemia may be defined as one in which there is an increase in the number of red blood cells of the circulating blood having a diameter greater than 7.5 microns, and a mean corpuscular volume exceeding 96 cubic microns. Such an anemia has a color index which is usually one or higher. It is generally considered to be due to defective blood formation and is fre-

*From The Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan.

†Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

quently controlled by anti-pernicious anemia medication but is not ordinarily benefited by iron therapy.

The laboratory procedures which are necessary to differentiate a microcytic from a macrocytic anemia are relatively simple. They consist of the following:

1. The color index which is determined by the simple and well-known calculation of dividing the per cent of hemoglobin by the number of red blood cells expressed in percentage of normal. For example:

$$\frac{\text{Hb}}{\text{RBC}} = \frac{40}{3.8 \text{ mill.}} = \frac{40}{76} = 0.53$$

The color index in a microcytic anemia is characteristically below 1.0 whereas in a macrocytic anemia it is 1.0 or greater.

2. The diameter of the red blood cells as determined by measuring 200 red blood cells as they appear on a stained film and charting them according to the method of Price-Jones.¹ (See Chart 1.) In a microcytic anemia the percentage of cells having a diameter of less than 7.5 microns

is increased whereas in a macrocytic anemia there is an increase in the cells having a diameter greater than 7.5 microns.

3. By determining the mean corpuscular volume. This is accomplished by determining the packed volume of red blood cells in a quantity of blood which is kept from clotting by the addition of heparin. After centrifuging at high speed the packed volume of red blood cells in percentage is read from a graduated scale on the special tube. This figure is divided by the total number of red blood cells per cubic centimeter, and the result, which is expressed in cubic microns, is known as the mean corpuscular volume (M.C.V.). Normally this figure varies between 89 and 96 cubic microns; in a microcytic anemia it may be as low as 60 cubic microns, whereas in a macrocytic anemia it may be as high as 120 cubic microns. Chart 2 illustrates these changes diagrammatically.

THE MICROCYTIC ANEMIAS

Microcytic anemia is most commonly of the iron deficiency type and discussion will be limited to this variety. It is the predominant form of anemia encountered in the practice of medicine and usually yields to iron therapy. Experience indicates that it most frequently results from chronic gastro-intestinal hemorrhage in association with peptic ulcer, carcinoma of the stomach or hemorrhoids. In females, menorrhagia and metrorrhagia are important etiologic factors in addition to gastro-intestinal bleeding.

Before discussing the causative mechanism of this type of anemia it is desirable to discuss briefly the metabolism of iron in the body. The average intake of this metal in a normal healthy adult in the United States has been estimated to vary between 12 and 20 milligrams daily. Approximately one-half of this amount apparently passes through the gastro-intestinal tract unchanged, under normal conditions. It is known that the iron which is not excreted by the body is used over and over again. In health this comparatively small daily intake of iron is sufficient to provide for the daily needs of the body, and in addition to create a reserve store for use in emergencies. The food iron which is thought to be in the ferric form is changed to the ferrous iron by the action of the hydrochloric acid in the gastric secretions and absorbed as such in the jejunum. Dietary iron is present in greatest amounts in animal protein, vegetables and fruits. For example, apricots, beans, beef, liver and egg yolk contain approximately between six and eight milligrams per 100 grams of food. It has

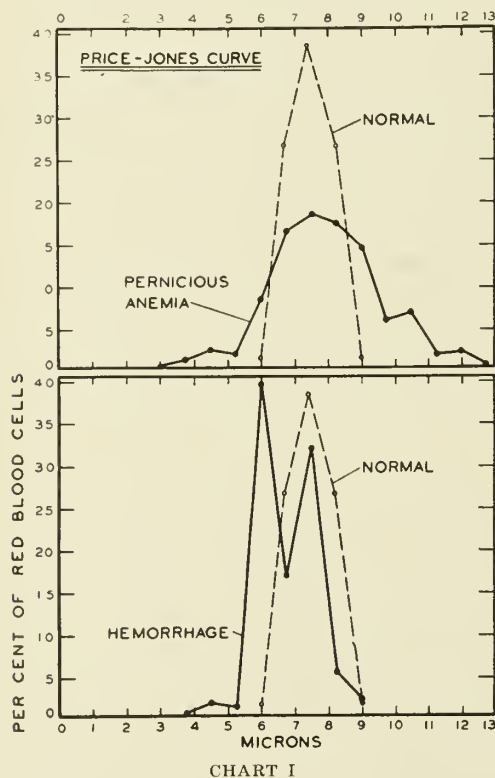
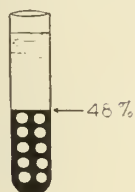


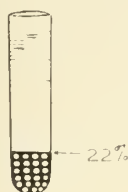
Chart 1. Method of charting the diameter of the red blood cells according to the method of Price-Jones. The percentage of cells having various diameters, expressed in microns, is recorded. The upper chart shows the curve of the blood in a macrocytic anemia which in this case is pernicious anemia, as compared to the percentage of cells of various diameters in normal blood. The lower chart compares the measurements of the red blood cells in a patient with a microcytic anemia due to chronic hemorrhage with the blood of a normal person.

NORMAL



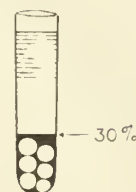
48% packed vol. R.B.C.
5.0 mill. R.B.C. per cu. mm.
 $\frac{48}{5.0} = 96$ cu mm. (M.C.V.)
C.I. = 1.0

MICROCYTIC ANEMIA



22% packed vol. R.B.C.
3.5 mill. R.B.C. per cu mm.
 $\frac{22}{3.5} = 63$ cu mm. (M.C.V.)
C.I. = 0.5

MACROCYTIC ANEMIA



30% packed vol. R.B.C.
2.5 mill. R.B.C. per cu. mm.
 $\frac{30}{2.5} = 120$ cu. mm. (M.C.V.)
C.I. = 1.5

CHART II

Chart 2. Principles involved in determining the mean corpuscular volume of the red blood cells. The normal is obtained by dividing the percentage of packed cells as determined by a reading on the graduated scale of the centrifuge tube, by the total number of erythrocytes. In this determination the M.C.V. is 96 cubic microns which falls within the normal limits of 96 to 89 cubic microns. The changes in the blood from a patient with a microcytic anemia indicate that the individual cells have a small volume as shown by a M.C.V. of 63 cubic microns, whereas those of a macrocytic anemia have a M.C.V. of 120 cubic microns, or a large individual cell volume. In general it may be said that with cells of normal size the color index is usually 1.0; in a microcytic anemia it is below 1.0; and in a macrocytic anemia it is 1.0 or greater. There are, however, important exceptions to this statement.

been emphasized² that all of the iron present in food is not available for use by the body. Assuming that the di-pyridyl method for determining such information is correct, it would appear that the iron in liver, muscle and soy beans is only 60 per cent available, that in wheat 47 per cent, and that in oysters and spinach about 25 per cent. It is of interest to note that the latter contains only about 2.5 milligrams of iron per 100 grams, of which only about one-quarter is thought to be available for use by the body. Despite these facts, it has long been recommended as a valuable source of dietary iron.

The average total amount of iron in the body is estimated at about 3.0 grams, of which 80 per cent is contained in the hemoglobin and the remainder chiefly in the liver, spleen, kidneys and bone marrow although traces of this element are present in every cell of the body. When certain circumstances occur, the iron stores may become depleted and, as a result, there is an insufficient quantity of this element available for the synthesis of the normal amount of hemoglobin. As a result an anemia of the iron deficiency type develops. The causes for depletion of the iron reserves may be considered under the following headings:

1. Diminished iron intake. It is unlikely that an iron deficiency anemia would develop in a healthy adult male despite a striking curtailment of the intake of this metal over long periods. This is shown by the absence of such an anemia

in adult males who have been placed on an intake as small as 4.9 milligrams daily for as long as 316 days.³ Such a statement is not true, however, in the case of women and children, for in them the increased demand for iron due to growth, menstruation, pregnancy and lactation, when combined with a low iron intake, commonly results in a severe anemia of an iron deficiency type. Evidence supporting this is to be found in the observations of Davidson, Fullerton and Campbell⁴ who performed 3,500 blood examinations on individuals of the poorest classes in northeast Scotland who partake of a diet low in iron. An anemia, chiefly of the iron deficiency type, was observed in 41 per cent of infants under two years, 32 per cent of pre-school children, 27 per cent of school children, 16 per cent of adolescent women, and 45 per cent of adult women. In this group, anemia was not observed in adolescent and adult males, except in association with organic disease. It is estimated by MacKay⁵ and ⁶ that two-thirds of the women and 50 per cent of the infants of the hospital class in London have an anemia of the iron deficiency type. Similar studies in the United States are not available but it would be surprising to find such a high prevalence among the adult women and children of this country, although it is undoubtedly more common than is generally thought.

2. Anemia due to increased demand for iron. Repeated and frequent pregnancies followed by lactation may contribute to the development of

an iron deficiency anemia because of the increased amount of iron required by these physiologic processes. This probably occurs, however, only when the mother has been anemic prior to pregnancy, or in association with postpartum bleeding or prolonged lactation. Other factors such as a diet inadequate in iron and an achlorhydria which does not favor the normal absorption of iron may also contribute to the production of such a condition. It is extremely improbable that a woman who is normal in every way and partakes of an adequate diet will develop a hypochromic anemia in the course of an uncomplicated pregnancy. This becomes more apparent when one considers, as Fullerton⁷ has emphasized, that the average amount of iron required to build fetal tissues during a pregnancy, plus the iron lost in the maternal milk during the period of lactation, is almost equal to that conserved by the absence of menstrual periods during this interval. Regardless of the correctness of this statement, hypochromic anemia in pregnancy on the basis of an iron deficiency is not rare, as indicated by the observations of Corrigan and Strauss⁸. They studied the blood of two hundred women during the last four months of pregnancy. Alternate patients received 0.5 grams of ferrous sulphate daily, and the others were given placebos. Twenty-four of the one hundred women who received the latter had a hemoglobin of less than 70 per cent postpartum whereas none of the one hundred women who received iron had a hemoglobin of less than 70 per cent. By such a simple and direct procedure these observers appear to have demonstrated two important facts; first, that anemias are not uncommon in pregnant women; and second, that they are most frequently of the iron deficiency type, since they may be prevented by the proper administration of compounds of this metal.

One additional important point in regard to the iron deficiency anemias of pregnancy should be emphasized. Even if such an anemia exists in the pregnant mother, the child will be born with a normal hemoglobin but lacking in adequate iron reserves. Consequently the infant almost always will develop an anemia during the first year of life, unless supplementary iron is added to the diet.

3. Inadequate absorption of iron. It is known that all iron before absorption is changed from the ferric to the ferrous state by the action of the hydrochloric acid in the gastric secretions. In the presence of an achlorhydria, it is thought that this may be accomplished, but less effectively, by lactic or other organic acids. Whatever the facts may be in regard to this, there is suggestive evi-

dence that an absence or diminution of hydrochloric acid in the gastric secretion creates a condition which is unfavorable toward the absorption of a normal amount of iron. The observation that an achlorhydria is present so frequently in patients with an iron deficiency anemia suggests that there is more than a coincidental association between the two conditions. It has not been clearly established, however, whether the achlorhydria precedes or follows the anemia. Nevertheless, it is thought in the light of our present knowledge that changes in the hydrochloric acid content of the gastric juice plays some etiologic rôle in the production of an iron deficiency anemia. Furthermore, the possibility that a severe diarrhea, such as occurs in patients with chronic ulcerative colitis, may cause an iron deficiency is one which deserves careful consideration. It does not seem illogical to conclude that the rapid passage of the gastro-intestinal contents through the alimentary tract creates an unfavorable condition for the absorption of a normal amount of iron.

4. The importance of infection. There is significant clinical evidence which suggests very strongly that acute or chronic infections may contribute to the production of an iron deficiency anemia, especially when associated with other well recognized etiologic factors such as chronic bleeding, growth, achlorhydria, repeated and frequent pregnancies, and prolonged lactation. It may exert its effect indirectly by the production of a poor appetite with a resultant inadequate food intake, possibly by increasing cellular breakdown which causes an increased loss of iron from the body, or by a "toxic" action on the bone marrow which depresses the rate of red cell formation. While this is theoretically plausible, and is supported by clinical observations, there is no direct evidence relating to the exact mechanism of this action.

Treatment of the Iron Deficiency Anemias

The method of treatment of these disorders with iron is exceedingly easy to understand and the results attained are prompt and gratifying. Despite this, however, the amount of confusion which has been present in the past concerning the use of this comparatively simple remedy is remarkable. During recent years important data have been accumulated which clarify the therapeutic indications for the use of the drug, and accurate information is now available concerning its optimum dosage and the efficacy of various preparations. There are two simple rules regarding its use which must be followed if satisfactory results are to be attained. They are, first, the administration of an adequate dosage;

and second, the treatment should be limited to patients who have an iron deficiency.

There are many forms of iron which are effective provided a sufficient amount is given. The most desirable, in the order named, are as follows:

1. Ferrous sulphate, 0.2 gm. (3 grains) 4 i.d.
2. Ferrum reductum, 0.5 gm. (7½ grains) t.i.d.
3. Ferric ammonium citrate, one level teaspoonful of crystals in milk through tube, equaling 2.0 gm. (30 grains) t.i.d.
4. Bland's pills, (each pill containing one grain or 65 mg. of ferrous carbonate) 4 pills t.i.d.

Whereas any of these forms are effective, the first is probably the most satisfactory because it is a simple and inexpensive compound of ferrous iron which is easily absorbed. There is no convincing proof that the combination of iron with various other substances, such as liver or stomach preparations, is more efficacious than the metal alone in the treatment of uncomplicated iron deficiencies. Their use has been advocated and a therapeutic effect is produced as a result of their iron content, but they are expensive and no better results are obtained than with the simpler compounds of iron which are recognized by the Pharmacopoeia. There is convincing experimental proof in animals that iron in combination with copper is more effective in treating iron deficiency anemias than the former alone, but this has not been demonstrated in patients with a similar type of anemia. Furthermore, practically all commercial preparations of the drug are contaminated with copper, and as a result in practice the two substances are given unwittingly in most instances. Even if such a combination is desirable, therefore, it seems unnecessary to add copper to commercial forms of the drug.

There seems to be little if any indication to administer iron other than by the oral route although intravenous and intramuscular therapy has been recommended. Although approximately only four per cent of the total dose is absorbed when it is given by mouth, apparently this is a sufficient amount to produce the optimum effect. Ninety-six per cent is utilized following its parenteral injection, but when adequate dosage is given (which is usually much greater than ordinarily employed) painful local reactions as well as disconcerting general untoward symptoms are produced. It has been stated that the oral administration of iron may be followed by distressing gastro-intestinal complaints. This probably does occur occasionally, but our experience following the therapeutic use of iron in many hundreds of patients indicates that such effects

are rare and cannot be considered to be of clinical importance. It should be kept in mind that such symptoms, when present, may not be associated with the iron medication but commonly occur as a part of the disease for which the drug is dispensed.

There is only one indication for the use of this drug and this is a *lack* of the reserve supply of this metal in the body. In other words, an iron deficiency must be present if therapeutic results are to be anticipated from its use. For example, according to Heath,⁹ "An adult man in a good nutritional state can lose about one-half of his circulating hemoglobin and recover this completely without recourse to iron therapy." This is because such a person has adequate iron reserves which are created for just such emergencies. On the other hand, if these stores are depleted as the result of various circumstances which have been discussed previously, there arises a logical and definite indication for such therapy.

Additional Procedures: The most obvious therapeutic indication in the treatment of the ironing cause of this condition. This most frequently means the control of chronic hemorrhage which is commonly associated with gastro-intestinal or uterine disorders and need not be discussed in detail. One of the most difficult forms of chronic hemorrhage to control is persistent uterine bleeding which is not associated with known organic pathology, such as a fibroid of that organ, but apparently is based on some obscure endocrine disorder. This type of bleeding may be refractory to all forms of therapy except radical measures such as exposure to the roentgen ray or hysterectomy. Repeated and frequent pregnancies are of importance from an etiologic standpoint, and this state should be controlled in women who have a tendency to develop anemia. Furthermore, they should receive iron as a prophylactic measure, especially during the latter half of pregnancy and throughout lactation. The infants of such women should be placed on a proper diet and the blood observed at intervals to determine if an anemia develops.

The etiologic significance of infections to the iron deficiency anemias has already been discussed. Inasmuch as they are of recognized importance, proper measures should be used to eliminate or control them if possible. Although such conditions may not be directly responsible, they nevertheless play an important contributory rôle, especially in women and children. It is doubtless true that the etiologic importance of devitalized teeth and questionably infected tonsils has been overrated but the possibility of the importance of

such foci should be considered carefully in each individual case.

The rôle of an inadequate diet is of importance as indicated by studies of indigent individuals in England and Scotland.⁷ If an economic situation develops to such an extent in this country as to cause a serious dietary restriction, it may become of increasing significance because of the curtailment in the diet of foods high in iron content. It should be kept in mind also that certain persons, usually because they have "freakish" or peculiar ideas concerning their food intake, place themselves unknowingly on a diet which has a low iron content. Certainly any patient who has an anemia of this type should have a careful study made of his or her dietary habits, and corrections made if this is necessary.

Finally, is dilute hydrochloric acid beneficial as a therapeutic agent in patients with this type of anemia? On theoretical grounds it may appear that the oral administration of acid would assist in the absorption of iron, since many of these patients are known to have an achlorhydria. Experience teaches this is unnecessary because satisfactory results follow the use of iron alone and, although the achlorhydria may persist, there is usually a disappearance of all gastro-intestinal complaints which may be associated with the anemia. When such complaints continue, dilute hydrochloric acid, a teaspoonful in a glass of water, with meals, is worthy of a trial.

THE MACROCYTIC ANEMIAS

These anemias, which previously have been defined, are of importance because new information has recently been obtained which explains the mechanism of their production, and because in many instances, but not in all, they may be controlled by the administration of anti-pernicious anemia medication such as liver and stomach preparations. Such a type of anemia is observed in true Addisonian pernicious anemia, in certain dietary deficiencies, in some cases of sprue, following various gastro-intestinal disturbances, in myxedema, occasionally in leukemia, and for a short interval following an acute hemorrhage.

Although a macrocytic anemia may develop as the result of a number of recognized causes, it is now known, as a result of the work of Castle and his associates,¹⁰ that it may result from a disturbance of one or more different steps which are concerned with the normal control of the development of the red blood cells in the bone marrow. Definite clinical and experimental proof now indicates that the erythrocytes mature in the bone marrow and are released to the circulating blood, under the control of a regulatory system which functions as

follows: an unknown constituent of the diet which is called the "extrinsic factor" reacts with the "intrinsic factor," probably an enzyme which is normally present in the gastric secretions, to form a substance which controls the rate of development of the red blood cells in the bone marrow. Because these cells are not released under normal conditions until they have fully matured, any disturbance which retards their maturation will diminish the number which is supplied to the peripheral blood, and a macrocytic anemia due to diminished blood formation will develop. This variety of anemia which is sometimes observed in sprue is thought to be due to a lack of the extrinsic factor. The fact that some macrocytic anemias show a therapeutic response to the administration of yeast suggests that a dietary deficiency has an etiologic significance. It is now recognized that true pernicious anemia is due to an absence or diminution of the "intrinsic factor." Even when the extrinsic and intrinsic factors are available, a macrocytic anemia may develop as a result of other disturbances which prevent the erythrocyte maturing substance from performing its function. For example, there may be a failure in its absorption due to intestinal anastomoses or stricture. Finally, a macrocytic anemia may be due to an inability of the body to store the substance in the liver and release it in an orderly fashion as needed. This is thought to occur in extensive disease, such as cirrhosis, involving this organ.

The lesions of the gastro-intestinal tract which may be associated with a macrocytic anemia are total gastrectomy, extensive infiltrative carcinoma of the stomach, such as occurs in linitis plastica, various abnormalities of the intestines such as stricture and anastomoses, and extensive involvement of the liver which may be associated with cirrhosis or some other condition such as an acute hepatitis.

Treatment: It is important to recognize a macrocytic anemia because in many instances it yields to anti-pernicious anemia medication, especially to the parenteral administration of liver extract. In true pernicious anemia the condition ordinarily may be controlled by the oral administration of either liver extract or ventriculin. Experience shows that these substances are equally effective and that the one has no advantage over the other. Probably the most effective method of treating pernicious anemia as well as other macrocytic anemias, is to give liver extract intramuscularly. This eliminates all question of absorption from the gastro-intestinal tract, it causes the patient to return at intervals for observation, ordinarily it is the least expensive, and it will maintain the blood at a normal level when other forms of

therapy fail. Once the blood has returned to normal it can be maintained there by an intramuscular injection given every one to three weeks. By this method, therefore, the annoyance of taking oral medication is obviated, which is a welcome relief to many patients.

Dosage: It is difficult to state precisely the optimum amount of liver extract or ventriculin which is required by each individual patient because various conditions such as senility, infection, and other unknown factors, may require a modification in dosage. Furthermore, until recently there had been no recognized unit of potency for any of the anti-pernicious anemia drugs. The most practical advice is to use the product which is prepared by reputable pharmaceutical firms in the dosage recommended by them. This should be checked by frequent determinations of the red blood cell count. A sufficient quantity should be administered to keep the level of the red blood cells at five million per cubic millimeter. It is not possible to evaluate the treatment entirely by the subjective sensations of a patient because a moderate degree of anemia may persist in an asymptomatic patient. It is generally thought that in patients with pernicious anemia, central nervous system symptoms may appear, or, if present, may progress unless the red blood cells are maintained at a high level of normal.

This paper has dealt almost entirely with various types of macrocytic and microcytic anemia and no attempt has been made to discuss other anemias such as aplastic anemia, myelophthisic anemia, chronic hemolytic anemia and many others. This is because the two main types of anemia which are considered in this paper are by far the most common; our knowledge concerning them has increased greatly in the past few years, and, finally, the proper therapeutic agents usually produce gratifying results.

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REGIONAL ENTERITIS*

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Considerable interest in nonspecific inflammatory lesions of the intestinal tract was created by Crohn¹ et al., in 1932. They reported fourteen cases involving the terminal ileum, which they called regional ileitis. They believed regional ileitis to be a clinical and pathologic entity affecting young adults, characterized by a localized granulomatous inflammatory process producing ulceration, cicatrization, stenosis, and fistulous formation. Granulomata of the intestinal tract had been reported prior to this by Mock², Moschcowitz³ and several others. Since Crohn's stimulating paper six years ago, well over two hundred cases have been reported in the American journals and many in the European literature. The increase in the number of cases reported would indicate that the disease is not so rare as generally believed. Many cases in the past have undoubtedly been diagnosed as tuberculosis or malignancy. Twenty-six of the thirty-nine patients reported by Pemberton and Brown⁵ had had previous operations, and the disease had not been recognized at the time of operation.

The disease may be encountered in an acute or chronic form. The lesions are not confined to the terminal ileum, but may involve one or more areas of the jejunum, ileum, or colon, with the same pathologic findings but with varying clinical manifestations. Lewishon⁴ classifies it as to frequency and location as follows:

1. Segmental ileitis.
2. Segmental colitis.
3. Ileocolitis.
4. Segmental jejunitis.
5. Jejuno-ileitis.

The etiology is unknown. Several anatomic and mechanical theories and various organisms have been suggested as the causative factors, but none has been proved. Reichert and Mathes⁶ suggest that the enteritis may be secondary to a mesenteric lymphedema. Experimentally they injected the mesenteric lymphatics of the ileum in dogs, producing a mechanical lymphedema which resulted in a localized ileitis corresponding to the areas injected. Pathologically, these areas of ileitis were similar to those found in man. Felsen⁷ believes bacillary dysentery with a superimposed

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

secondary infection is responsible, but this has not been confirmed. Anaerobic streptococci and colon bacilli have been found associated with the disease. Tuberculosis has been eliminated by laboratory studies and negative tuberculin reactions. It is possible that a more careful investigation of the acute cases may ultimately lead to the discovery of the cause.

The pathology in acute cases consists of an acutely inflamed, edematous, soggy bowel, which bleeds easily upon manipulation. The serosa may be a blotchy red and is often covered with a plastic exudate. Enlarged lymph nodes are found in the thickened mesentery. The mucosa is swollen and its folds distorted. Small lenticular ulcerations may be present on the mesenteric side of the bowel. The submucosal and muscular layers show a swollen hyperplastic inflammatory reaction. As the disease progresses there is marked thickening of the intestine and numerous adhesions are formed. The inflammation and ulceration may narrow the lumen of the bowel so much that obstruction is produced by the swelling, or the ulcerations may perforate into the neighboring bowel, mesentery, or peritoneal cavity, with fistula and abscess formation. If the process heals after a moderately severe inflammatory reaction with ulceration or repeated attacks, the contraction of the scar tissue formed in the bowel may produce obstruction. Perforations into the adjacent bowel are more common than into the peritoneal cavity or mesentery. The microscopic findings are those of an acute and chronic inflammatory process.

Regional enteritis does not present a definite clinical picture since the symptoms depend upon the severity, location, duration, and extent of the lesions. In the acute cases, the symptoms are those of an acute abdominal inflammatory process. Pain, tenderness, sometimes rigidity, low grade fever and slight elevation of the leukocyte count are usually present. Diarrhea is not common at this stage unless a large area is involved, or unless the colon is affected. A diagnosis of acute appendicitis is usually made when the terminal ileum is involved; practically all the acute cases described in the literature were found at operations for appendicitis. The onset of the disease may be more insidious than appendicitis. Usually it becomes chronic, with periods of remission and exacerbation, but it may progress rapidly to the stage of ulceration and obstruction. During the period of ulceration the symptoms are those of a mild colitis; cramps, borborygmus, and diarrhea, with mucus, pus, and occasionally blood in the stools. If the lesions have been present for some time there is usually loss of weight, secondary

anemia, and generalized weakness. The obstructive phase is most commonly encountered, and the symptoms are those of partial intestinal obstruction.

When fistulas and abscesses are present the disease is usually in an advanced stage. Secondary anemia, loss of weight, and general debility are noted. Frequently the patient does not desire to eat, and pain is often relieved by defecation. An extra-abdominal fistula following appendectomy, which does not close spontaneously or resists attempts at closure, is frequently due to regional ileitis. In jejunitis, vomiting is more common and the pain is at a higher level. If the lesions are confined to the colon the symptoms are those of ulcerative colitis. Most of the cases of regional enteritis are diagnosed at operations for appendicitis or intestinal obstruction. The preoperative diagnosis depends largely upon whether or not the attending physician suspects the possibility of a localized enteritis and has a proper roentgenologic examination made.

If the appendix shows little or no inflammatory reaction at operation for acute appendicitis it would seem wise for the surgeon to look further for the cause of the patient's symptoms; many of the cases reported had had appendectomies without the enteritis being discovered.

Tuberculosis can usually be eliminated by its absence in the lungs, since hyperplastic ileocecal tuberculosis without pulmonary involvement is very rare. Carcinoma is sometimes difficult to differentiate, especially when the terminal ileum and cecum are involved and a mass can be felt. Amebic dysentery, lymphoblastoma, actinomycosis, and syphilis of the glands must also be considered in the differential diagnosis.

In routine x-ray examination of the gastrointestinal tract it is not practical to make a detailed study of the small intestine. The referring physician should inform the roentgenologist when a lesion of the small bowel is suspected so that the patient will be seen at proper intervals and particular attention may be paid to the small intestine. If these lesions are not sought for carefully, many of them will be overlooked. There are two methods of roentgenologic examination for localized enteritis; first, the usual barium meal; and second, the barium enema. In the first method it is important to fluoroscope the patient frequently (every thirty to sixty minutes) and make films as indicated until the roentgenologist is satisfied he has thoroughly inspected the small intestine. This may require eight hours or more. The barium enema is particularly valuable for studying the colon and terminal ileum. If the terminal ileum

does not fill as soon as the cecum is distended, a few minutes delay often allows the ileocecal orifice to relax and a good view of the terminal four or five inches is obtained. The filled sigmoid often obscures a part of the ileum because it is usually low in the pelvis and hard to palpate satisfactorily. If the patient is allowed to expel the enema, after a sufficient quantity of the barium has passed through the ileocecal valve, the cecum and terminal ileum will rise out of the pelvis unless held down by adhesions and permit palpation for pliability and study of the mucosal pattern.

It is very difficult to make a roentgen diagnosis early in the course of the disease. Often the only sign is persistent irritability and lack of filling or hypermotility of the involved segment of the intestine with hypomotility above the site of the lesion. There is swelling and flattening of the mucosal pattern. Occasionally the mucosa may have a polypoid appearance. Weber⁵ thinks the lesions can be diagnosed as early as they produce symptoms. As the disease progresses the wall of the intestine becomes thickened and is less pliable, with greater deformity of the mucosa. When ulceration is present the outline of the intestine is jagged and irregular with areas of narrowing. As the lesions become more advanced the lumen of the bowel is decreased in size and its appearance on the film is that of a twisted cord as described by Weber or as the string sign so aptly applied to this condition by Kantor. The string sign, however, is not pathognomonic, since it may be produced by other inflammatory or neoplastic processes. At this stage a sausage-like mass can often be palpated and the involved intestine may be fixed by adhesions with less than its usual mobility. The normal bowel above is often dilated, with marked delay in the motility of the barium meal. If there is an abnormal amount of gas in the small intestine, only a small quantity of barium should be given by mouth because a large amount may precipitate complete obstruction. Since the terminal ileum is the most frequent site of the disease, it may be advisable to begin with a barium enema. A great deal of information can be obtained with the enema when the terminal ileum is involved. If a mass is palpable it may be impossible to fill the ileum, but there is usually a pressure defect on the medial side of the cecum. When there is an ileocolitis the findings are similar to those of ileocecal tuberculosis characterized by irritability and irregularity of the cecal wall, as demonstrated by both the enema and the barium meal. It is doubtful if the two conditions could be differentiated were it not for associated tuberculosis elsewhere in the body.

When only the colon is involved the proximal portion is usually affected. The appearance is that of a localized area of ulceration with irritability, irregularity and thickening of the bowel wall.

Fistulas between the segments of bowel may occasionally be demonstrated as very small sinus tracts. Extra-abdominal fistulas communicating with the intestine may be shown by bismuth or lipiodol injection. Lewishon⁴ reports two cases where primary lesions of the sigmoid were suspected and fistulas between the sigmoid and ileum were demonstrated by barium enema. He thinks this finding in young adults is more suggestive of regional ileitis than of malignancy.

In examining these cases by barium meal one should be careful not to confuse a long appendix with the string sign. The margin of the appendix is usually smooth and regular in outline, whereas the outline of the ileum is more irregular and shows a fine roughening of the margins of the barium shadow. Irritability of the intestine may sometimes be difficult to differentiate, but repeated observation and re-examination will usually solve the difficulty.

The ultimate prognosis is uncertain. We know too little about the cause of the disease. The reported cases have not been under observation long enough to form conclusions. Many of the early cases in the acute stage, apparently recover after an appendectomy. Some recover after short circuiting operations, while others progress to fistula and abscess formation, the patients eventually dying from exhaustion. Crohn,¹⁰ and others, believe wide resection to be the method of choice and to offer the best prognosis, since there is less likelihood of recurrence. Berg¹⁰ has operated upon some thirty patients without recurrence.

Shearer and Jackson¹¹ report a case in which involvement of the terminal eight inches of the ileum was found at operation for appendicitis. They resected widely the cecum and ileum. Three years later an obstruction developed at the junction of the colon and ileal anastomosis. At the second operation the ascending colon and more of the ileum were resected. The patient remained well for nine years, and in 1935 had another resection of the ileum above the anastomosis. With a period of nine years of good health one would expect the lesion to be cured. It will be interesting to know if this is just an unusual case or if many cases are prone to recur.

At present some authors do not agree upon the best method of treatment of the various stages of localized enteritis. Meyer and Rosi,¹² Rockey,¹³ Erb and Farmer,¹⁴ and several others, have re-

ported patients with early regional ileitis operated upon for acute appendicitis, and the symptoms apparently subsided without surgical treatment of the diseased bowel. If the disease appears to be fulminant, a short circuiting operation is probably the best procedure. Pemberton and Brown⁵ believe the ileum above the lesion should be anastomosed, end to side, to the transverse colon, and that fifty per cent will recover without further operative procedure. The distal loop should be closed so that none of the bowel contents will pass through the involved area. Complete resection can be performed later if necessary. The edema, plastic exudate, and adhesions often disappear after short circuiting operations and for this reason it would seem less hazardous to operate in stages. Crohn¹⁰ and others believe in wide resection, the amount removed depending upon the extent of mesentery involved rather than upon the amount of diseased bowel. In the later stages when fistulas are present extensive surgery is necessary to resect the fistulous tracts and the involved bowel.

Medical treatment has little curative value. In those patients not operated upon, Musick¹⁵ suggests the following procedure: first, combat anemia with iron, liver, and vitamins; second, establish a low residue nourishing diet; third, administer Bagen's diplostreptococcic serum; fourth, inject antidysentery serum intravenously; or fifth, give autogenous serums first subcutaneously and later intravenously.

SUMMARY

1. Regional enteritis may be encountered in an acute or chronic form. It may involve one or more areas in the jejunum, ileum, or colon.

2. The etiology is unknown.

3. The pathology consists of an acute or chronic nonspecific inflammatory process.

4. The symptoms depend upon the severity, duration, extent, and location of the lesions. They may simulate appendicitis, ulcerative colitis, obstruction, or malignancy.

5. The preoperative diagnosis depends largely upon proper roentgen examination.

6. The treatment is essentially surgical.

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MANAGEMENT OF UTERINE MALIGNANCY*

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To discuss the management of uterine malignancy in any degree of its entirety, in any one paper, is naturally out of the question. We shall outline the general subject and try to give the high-lights of the accepted opinions. We claim no special originality other than our comments from personal experience and our interpretation of the opinions surveyed. Generally speaking, uterine malignancy brings to mind carcinomata, both of the corpus and of the cervix, but it will probably be worthwhile to mention sarcoma in passing. We will also say a word concerning chorionepithelioma.

As so capably stated by Crossen,¹ the treatment given patients with cancer of the uterus in any community is decided largely by the surgeon of that community. "As it is common knowledge that this disease requires radical measures, the patient is naturally taken at once to the surgeon. In the larger city, the patient may come under the care of someone making a special study of pelvic surgery. In other places, the full responsibility falls on those doing general surgery." At the outset, let us state that although not as rapidly as could be desired, our armamentarium to combat the disease after the diagnosis is established, is gradually becoming more satisfactory. In spite of the progress that has been made, and regardless of the opinions of procedure to be followed, our best weapon in effecting a cure is the prevention or very early diagnosis, especially in the cervical lesion. We have less control in the prevention of carcinoma of the corpus, but it does behoove us not to overlook the early signs and symptomatol-

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

ogy, or rather, the very first sign or symptom of an existing lesion of the fundus.

Therefore, it is not the surgeon as such, upon whose shoulders will rest the greatest task in the curing of cancer or further improvement of our present statistics, but physicians in general. This is true because the general physician, more than the specialist, is the man who has the opportunity to check the patient, and to whom the patient turns for the relief of symptoms of conditions that are likely to become cancerous. We, as a profession, must be more and more on guard because the public has fallen into line fairly well in response to the cancer crusades.

Although the generally accepted figures² show the ratio of eight cervical carcinomata to one of the corpus, figures do vary in different clinics. In first consideration of cervical carcinomata, let us review the generally accepted classification of the League of Nations:

Grade I. Where the growth is limited entirely to the cervix. The uterus is mobile, with no change in cervical induration.

Grade II. Where the growth has spread to some portion of the adjacent vagina, with or without some induration of the cervical parametrium. The uterus still retains a degree of mobility. This is the so-called border line group. The above two classifications are considered operable.

Grade III. Where there is definite extension of the disease into the lateral or ureterosacral ligaments.

Grade IV. Where there is malignant invasion of the vaginal wall, bladder, or rectum, or metastatic growths in the pelvis.

There is usually no specific symptomatology for Grades I and II. Usually the first sign is that of bleeding, and this rarely occurs until the lesion has passed the first and second stages. The detection of the condition in Grades I and II is usually possible only where the patient has periodic examinations, or where he has been followed at frequent intervals, either for the continuation of symptoms or for an irritated non-malignant cervix, the most common of which is a persistent leukorrhea of almost any description. In these cases visibility and palpation may force the capable physician to establish the diagnosis by biopsy. One hardly needs to say that we firmly believe any chronic irritation of the cervix definitely predisposes to cancer. Cervical carcinoma is eight times as common in the multiparous as in the nulliparous cervix.

We quote from Schiller:³

"The early carcinoma and the small carcinoma are not identical. The course of development rises slowly, and then ascends rapidly. (This slow

early growth offers a marvelous chance for early diagnosis. The initial slow-growing phase lasts for up to two or three years.)"; and again from Crossen: "The microscopic change that constitutes the beginning of cancer does not cause bleeding or discharge."

It is the duty of the profession at large to remove any chronic irritated lesions of the cervix when encountered in practice. The lesions may be found either in special pelvic examinations, or where the pelvic examination is a part of the routine general examination which many authors are now advising as a safety measure to determine how the various vital organs are standing the wear and tear of life's activities. How is this irritated lesion to be removed? The answer to this question is, by the easiest, safest, accepted way that will clear up the irritation. Many times one can employ simple medication or specific medication for infectious conditions, the continuation of which maintains a constant state of irritation. The essential factor is adequate follow-up therapy to insure against the recurrence of the condition.

In any instance, regardless of the age or status of the patient, where there has been a definite cervical irritation, the patient should be examined every three to six months, over a period of eighteen months. If, in spite of our efforts along a conservative line the irritation continues, removal should be done by more radical methods. If cervical erosion, irritation, or scarring persists for any length of time, adequate biopsies from the most suggestive areas are imperative. One of the most common causes of cervical irritation is from cystic formation due to irritation from trauma or infection. If the cystic condition does not promptly clear up, a vicious cycle develops. The cysts produce further irritation; with further irritation, abnormal cystic secretion is enhanced. Another danger in this condition is that the cystic irritated area will frequently be covered by a thin, shining layer of epithelium. If the cervix is not carefully examined, it will look entirely innocent, but at the same time have the irritated tissues and cysts superficially camouflaged. It is our opinion that much can be accomplished in the prevention of carcinoma of the cervix by a wider, more adequate, yet judicious use of the actual cautery in cystic erosions, and any persistent erosion after infection has been reduced to a minimum. In experienced hands, the more recently advocated high frequency coagulation is just as adequate, and even has some advantages over the actual cautery.

Notwithstanding the fact that early carcinoma gives little or no symptomatology, actual diagno-

sis must be made of objective findings. Schiller distinguishes carcinoma of the cervix from normal epithelium by three characteristics: first, the diseased area is elevated; second, the surface is not smooth and shiny, but somewhat dull; and third, the carcinomatous epithelium is somewhat opaque. About thirty per cent of early cancers give the appearance of leukoplakia. In the remaining seventy per cent he advocates the use of his iodine test, although he admits a positive test does not necessarily mean cancer, but it indicates the necessity of biopsy if we are to be thorough in ascertaining early, or precancerous lesions. If a pathologic report of a precancerous lesion is obtained, it might suffice to have it thoroughly cauterized with deep cautery, but it is the general consensus we should use an adequate dosage of radium irradiation. The generally accepted dosage is about 1200 millicurie hours. (We must remember that any erosion of the cervix other than a very small superficial one, which warrants cautery, also warrants biopsy.)

Cervical carcinoma is most common in the fourth and fifth decades of life, but in the last few years, we have seen frequent enough reports to realize that no age group is immune. Any unusual vaginal discharge or abnormal vaginal bleeding, anywhere in the childbearing age as well as in the climacteric, merits re-investigation for the presence of cervical carcinoma. Once the diagnosis of cancer of the cervix is established, the majority of authorities agree that irradiation is the treatment of choice. Radical surgical procedures are gradually being abandoned, due to the high mortality rate of the operation, the necessarily high degree of skill of the operator, the equally or even more favorable results of irradiation therapy, and the fact that many inoperable cases can be salvaged by irradiation. The five year cures and salvaged cases from the use of irradiation have been greatly increased, and now overshadow the results obtained by surgery in even the most favorable cases. The latest progress and development in irradiation therapy are the increasingly large doses of deep x-ray therapy, which are now given prior to radium therapy. Of equal importance is x-ray therapy after radium treatment. There has been a tendency, during the past five years to combine irradiation and surgery, especially in the younger individuals where recurrences after therapy are so frequent. The best results cannot be obtained with irradiation therapy, and accidents cannot be reduced to a minimum, if this treatment is given by individuals who have not had thorough and adequate training in the field of irradiation therapy. We

should like to call your attention to the fact that statistics show the results of all cases including those individuals who do not have reasonable medical care. The favorable results in private practice will be much greater than those of any institution if proper therapeutic measures are used.

Carcinoma of the corpus uteri, generally speaking, is a disease of the postmenopausal period. Most writers agree that nearly fifty per cent of all postmenopausal bleeding is due to cancer of the corpus. However, some authorities are inclined to agree with Beclere⁴ in his contention that cancer of the corpus is rare under forty years of age, but is more common between the ages of forty and the menopause than has been supposed. Any patient with abnormal bleeding before or during the menopause should have curettage for biopsy to rule out cancer of the corpus. One of the most common symptoms of this condition is the presence of any abnormal discharge after the menopause. Usually, it first appears as a thin, watery discharge, later developing an odor and becoming irritating. Once the diagnosis is established, the treatment of choice by practically all authors is panhysterectomy. If the patient is a poor operative risk, irradiation in the form of radium and x-ray is employed. In several clinics, the use of pre- and postoperative treatment with radiation in the form of deep x-ray therapy is being used more and more, especially in cases where the lesion is suspected of being relatively far advanced.

MacCallum⁵ defined sarcoma as a tumor arising from connective tissue, but endowed with a new power of invading and actively destroying adjacent structure, and of forming colonies of its own tissue in distant organs. It occurs infrequently in the uterus, but when found it is present either as a primary growth or in association with fibroid tumors. Very rarely it is found in association with carcinoma. In spite of the recent increase in the number of cases reported, it is a very uncommon finding. The proportion of non-epithelial malignant tumors of the uterus to carcinoma is estimated as one to forty. The etiology is unknown. Traumatism and inflammation undoubtedly play some part. Sarcoma is a disease of the young and of the aged as well. Sarcoma of the cervix is very rare, only one in eight or ten.

Schumann⁶ believes that uterine malignancy occurring after the menopause is usually sarcoma as opposed to uterine carcinoma, which develops before and during the climacteric. No definite syndrome is present, and the patient so afflicted

does not present herself for treatment until extension or metastasis has already reduced the patient to a state beyond medical or surgical relief. Early diagnosis is difficult because the symptomatology is so vague, but the following are the essential points: sudden rapid growth or attacks of pain in the uterine fibroid; intermittent bleeding in a woman who presents a palpable uterine tumor, and who is past the menopause; evidence of cachexia, which is out of all proportion to the blood loss in a woman with a palpable uterine growth; large necrotic cervical growths; and uterine tumors in infants and young girls. The prognosis varies greatly. Until the past few years, the radical Wertheim operation was the only treatment. In the past ten years, many authors feel that irradiation with both x-ray and radium is the treatment of choice, because of the definite embryonic nature of the tumor, and the rapid response of the tissue to irradiation.

We should like to say a word about chorionepithelioma. As you know, fifty per cent of all chorionepithelioma results from hydatid mole. However, this does not mean that very many moles result in chorionepithelioma. Pathologically, there are three main types: first the chorioadenoma, destruens, or destructive placental mole, which is more likely to give a generally enlarged doughy uterus with evidences of hemorrhage or suppuration; second, the choriocarcinoma, or chorionepithelioma, the most malignant of all tumors, the cellular structure being markedly disorderly; and third, the syncytioma, which has a predominance of syncytial cells. Metastases are common in the vagina early; these being noticed before any previous diagnosis has been made. Just as frequently, or more so, are the metastases to the lung. The period of latency varies from immediately to as long as thirty years. Chorionepithelioma has no symptom syndrome peculiar to itself; therefore, it is very difficult to make the diagnosis. The symptoms of pelvic inflammatory disease, infected incomplete abortion, degenerating fibroids, or fundal carcinoma, are essentially the same as those of most cases of chorionepithelioma. As far as prognosis is concerned, if the anterior pituitary hormone remains absent from the patient's urine following treatment for the disease, one can reasonably assume that the active chorion elements have disappeared. The two steps in the treatment of the disease are first, prevention by the proper care of the moles; and second, early diagnosis in suspicious cases. The active treatment for the disease is radical surgery as soon as possible.

SUMMARY

1. Cervical cancer after it has been diagnosed is a problem for the surgeon or pelvic specialist.
2. Of greater importance is the responsibility of the physician in general in the proper management of conditions which may become cancerous, and intelligent early detection of any lesion.
3. Treatment of Grades I and II is outlined with special emphasis being placed on the increased importance of x-ray therapy before and after irradiation.
4. Irradiation only used for treatment of Grades III and IV.
5. Radical surgery, for all practical purposes, is the only treatment for carcinoma of the corpus. The greatest incidence of the disease is after the menopause.
6. Sarcoma is chiefly a disease of the corpus uteri, and radical surgery is gradually being replaced in the treatment by irradiation.
7. Fifty per cent of the chorionepithelioma result from hydatid moles.

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PREVENTION OF POLIOMYELITIS*

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The prevention and control of infantile paralysis are still unsolved problems. Quarantine measures are obviously empirical and wholly ineffective. This is due to complete inability to identify either carriers of the virus or susceptible persons and to the probability that the virus is carried by many healthy adults. Various measures of control have been attempted, but as yet none of them includes the fundamental requisites of safety, protection and facility of widespread and economic administration which are essential to a satisfactory public health measure.

The following concepts of poliomyelitis have been accepted as facts and are essential to the understanding of all efforts which have been made to prevent the disease. The causative agent is a filterable virus which finds its entrance into the body by way of the cribriform plate of the

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

nasal mucosa. It is highly neurotropic and moves along the axonal paths of the neuron rather than through the blood stream. Like other epidemic diseases of the upper respiratory tract the cases arising during an epidemic cover a wide latitude in degree of symptoms and pathologic effects. In an epidemic the number of slight cases expressing themselves as minor illnesses only, is probably very large as compared with the small number in which patients are frankly paralyzed.¹ Experimental work has been limited to monkeys because it has not been possible to reproduce the disease in any other animal. Intracerebral injection of the virus has given the highest percentage of takes, this being almost certain to produce it. Intravenous injection ranks second, and intranasal instillation of the virus has also given a high percentage of takes. It has been found difficult to produce it by subcutaneous injection.² Feeding the virus by mouth has been a failure. Toomey³ has reproduced it by opening the abdomen and making direct injection of the virus into the gastro-intestinal tract after conditioning the animals to a diet deficient in Vitamin D. Animals not so conditioned did not develop the disease. Vitamin D gave no protection against intracerebral injection. This seems of little significance since the greatest seasonal incidence of the disease occurs when there is the least possibility of Vitamin D deficiency.

In the experimental work it was observed that monkeys who had recovered from an attack of paralysis, even a mild form without residual paralysis, were protected from the effects of a second administration of the virus. This led to testing of the blood of recovered monkeys and human beings for immune substances and it was found that after recovery the blood contained neutralizing antiviral bodies. Test tube experiments established the neutralizing of virus by convalescent serum, both monkey and human. Neutralization for therapeutic purposes was attempted by intraspinal injection of convalescent serum after intracerebral injection of the virus. These experiments exploded therapeutic hopes since they proved without doubt that the serum has no benefit after paralysis is established. The next step was to introduce the serum several days in advance of the virus. Experimentally it was shown that intraspinal and intravenous injections of the serum gave some protection against injection of the virus into the nares and to a lesser extent against injection by the cerebral route. From this grew the hope that the serum might be used as a reliable prophylactic measure in human beings. Obviously the amount of con-

valescent serum available would be entirely inadequate as a public health measure.

This led to the use of normal pooled human serum as a complementary supply since it has been shown that a high percentage of adults (about 80 per cent) have neutralizing bodies in their blood. In the New York epidemic of 1931 this protective injection was recommended and used in several thousand children. It was believed that the incidence of poliomyelitis was less than in the uninjected population. In the early thirties Zingher of New York used it in the treatment of preparalytic cases and reported that 80 per cent recovered without any paralysis. Kramer and Aycock under a commission in Boston supplied the serum for years to all patients; the results were thought to be good. In 1931 they proposed a more thorough test by offering serum to alternate cases, but they had to conduct this experiment in Connecticut and New York, since they had convinced the physicians and people in the state of Massachusetts that the serum was of great value. Their final conclusion was that the serum had no value.⁴ As yet all results of the prophylactic use of serum are open to question because there is no means at hand to determine if the person immunized was really susceptible or if he was definitely exposed to the active virulent causative agent.

Vaccines have had their inning for the present. Three years ago it appeared that they were about to emerge from the experimental laboratory for a widespread clinical trial; but they have been returned to the laboratory because they were found to be wanting in two vital essentials: effectiveness and freedom from danger. Three types of vaccines have been offered. Brodie⁵ used the formalized virus. Kramer⁶ used a combination of an antiserum and a living virus; and Kolmer⁷ used a virus which was fully virulent for monkeys. Brodie advocated two injections of his formalized vaccine. Several thousand children were treated without any unfavorable reactions. Rivers⁸ made the following critical observations and prophecy regarding Brodie's work: that years ago others had pursued the same studies and found the results so discouraging that it did not seem worthwhile to apply it to human kind; since Brodie's report others had not been able to produce similar results. His prophecy was that if Brodie should continue with his cautious technic he would be "reasonably safe but ineffective." River's point of view was supported by the development of occasional cases of paralysis among the children treated with Brodie vaccine and last January Brodie⁹ himself

reported that further studies in immunology created serious doubt of any relation between the presence of antibodies and protection, and he further declared that none of the methods advocated offered any hope of prevention.

Kolmer of Philadelphia attracted much attention with his attenuated virus treated with sodium recinoleate. He maintained that having passed through the monkey the virus was much less virulent for human kind. He believed that sufficient additional safety was provided by intracutaneous or subcutaneous injection, and that there was no danger in its use. In 1934 he reported successful vaccination of monkeys against intracerebral injection of the virus and having injected his own children and himself without unfavorable reaction advised its use generally for children. In 1936 he reported that some 11,000 people had been immunized with this preparation with only slight constitutional reaction in less than two per cent of those treated. At the time of his report no cases of poliomyelitis had developed among those who had received the three injections advised. Ten cases of infantile paralysis occurred in children who had received one or two injections. These attacks of poliomyelitis he presumed to be due to virus acquired by natural exposure before immunization was complete. Rivers took strong issue with Kolmer. He maintained that others had not been able to demonstrate as much protection in monkeys as was claimed by Kolmer; that even large doses of the virus did not always produce antibodies in the animal; that occasional monkeys had become paralysed as a result of such treatment; and that the use of active virus in human beings was not safe. He also pointed out the obvious fact that most children are much more resistant to poliomyelitis than are the remaining few who contract it; that it was possible for the resistant children to stand three doses of vaccine, while the most susceptible ones, those most in need of protection, could not resist the active virus and developed paralysis promptly after having had one or two doses. In this manner Rivers places upon Kolmer the burden to prove that his method is safe. Thus by the close of 1936 the use of any form of vaccine or virus for the production of active immunity had been pretty well discredited. The consensus of opinion was one of great doubt as to the production of any immunity and agreement that the virus was not safe. Just recently Rosenberg¹⁰ of New Jersey reported the occurrence of a severe attack of paralysis in July, 1937, in a four year old boy who had received three injections of the Kolmer vaccine in the summer of 1935. (Com-

plete flaccid paralysis of both lower extremities.)

Coincident with the rise and fall of interest in vaccines was the theory of protection by the use of chemical sprays in the nasal passages. The logic of this approach was based upon the following reasoning: first, the virus is a highly neurotropic one which reaches the central nervous system by way of the olfactory nerve; second, complete section of both olfactory nerves^{11 and 12} in monkeys definitely prevents the invasion of the central nervous system by virus subsequently instilled intranasally or injected intravenously; and third, virus reaching any part of the nervous system, either peripheral or central, travels by axonal paths, probably largely or entirely inside the protoplasmic substance of the neurons. This is supported by the effect of sectioning the nerve paths. The idea that the disease might be controlled by modification of the portal of entry apparently occurred to three different groups about the same time. In May, 1935, Armstrong and Harrison¹³ of the National Health Institute reported that four per cent sodium aluminum sulfate protected monkeys against intranasal installation of the virus. In December of the same year Sabin, Olitsky and Cox¹⁴ reported similar results from the use of four per cent tannic acid solution. In February, 1936, Schultz and Gebhardt¹⁵ of California reported similar results with picric acid. They offered the additional information that several daily sprays of the nasal cavity provided protection over a period of several weeks. All were agreed that the protection was due to alteration of the local tissues, decreasing permeability rather than because of any antiseptic action. There was also agreement in this respect: that a high percentage of the sprayed monkeys did not become sick while a high percentage of the controls developed the disease in its typical form. There was also agreement that the chemical must be sprayed upon the cribriform plate, that it was not sufficient merely to introduce it into the lower chambers of the nose. These investigators believe that here is a method deserving trial.

Armstrong¹⁶ was the first to report a practical field test of the method in Alabama in 1936. The original plan was that all treatments should be given by physicians after they had been instructed in the theoretic and experimental basis for the treatment. The experiment got out of hand and most of the treatment was actually done by parents without contact with physicians. It is estimated that 270,000 persons were treated in one way and another with the picric acid solution. Obviously no very definite conclusions could be drawn under the circumstances, but it is believed

that the actual incidence of paralysis in the sprayed group was somewhat less than the calculated incidence based upon the rate in the unsprayed group of about 160,000. No unfavorable reactions were reported.

Schultz and Gebhardt¹⁷ reported the trial of more than forty different chemicals and chose zinc sulfate as the most desirable because of its low toxicity, simple composition, and its high protective value in monkeys. The technic of application has been developed and described by Peet, Nichols and Richter. They report that the side actions of zinc sulfate such as headache, burning, smarting and coryza are produced only in the upper part of the nose and that children are less affected than are adults. Sometimes the headache was severe and lasted several hours. The addition of pontocaine as local anesthetic controlled these symptoms very well. The formula which has been most accepted is as follows:

Zinc sulfate	1.0
Sodium chloride.....	0.5
Pontocaine	1.0
Water	100.0

These authors consider the actual application of the solution to the olfactory mucosa more difficult than was at first anticipated. Peet reports that direct nasal examination after spraying a large number of children with methylene blue showed that in practically all instances the solution did not go above the middle turbinate if an ordinary atomizer was used with the tip of the spray introduced only slightly within the nostril. This observation was confirmed with radiopaque substances. He maintains that the solution must be applied directly to the cribriform with an atomizer with a long narrow tip, under direct vision. The patient is seated with the head tilted back in the usual position for a nasal examination. A nasal speculum is inserted upward along the septum and the tip of the atomizer is passed beyond the middle turbinate under direct vision. X-ray and necropsy evidence indicates that about one cubic centimeter needs to be delivered in each nostril in order to cover the cribriform plate. If a power atomizer is used the pressure should be within the range of five to seven pounds. Any occlusion of the nasal passages may require shrinkage before the atomizer tip is inserted. Peet and his co-workers recommend daily spraying for three consecutive days, then single sprays at intervals of two weeks during the season of prevalence.

In the summer of 1937 this method was used in an epidemic in Canada¹⁸. Some 5,000 children were sprayed and their experience compared with

a similar number of non-sprayed children in the same area. The attack rate in the sprayed group was 2.1 per thousand as compared with 2.9 per thousand in the control group. The total numbers are too small to be significant and important. Public health authorities consider the method impractical because it requires first, physicians specially trained in the technic; second, special facilities; and third, too much time for treatment of large numbers to meet an emergency.

The work of Peet and his associates has been challenged by Myerson¹⁹ of New York, who examined the nasal passages of 157 children to determine the amount of space each nasal passage afforded for the introduction of the atomizer tip. He reported that of 157 children ten per cent had enough space in both sides of the nose to permit the use of the nasal tip; 29 per cent had sufficient space in one side only. Of 314 passages 75 per cent had insufficient or no space available for the introduction of the nasal spray tip. He sprayed the noses of adults and children with skiodan in accordance with the technic of Peet and reported that with a few notable exceptions the skiodan was found upon the floor of the nose, passing into the pharynx. Myerson also made studies to determine the value of instillation of the chemical by means of a spray or dropper, with the patient in a dorsal recumbent position and his head hanging over the end of the table so that the top of the head was parallel with the floor. Skiodan and thorotrast were used after a preliminary shrinking spray. Following the introduction of one cubic centimeter of the opaque substance the head was kept in position for three minutes, after which an x-ray picture was taken, with the result that, in each case examined roentgenographically, the opaque substance could be demonstrated in the olfactory area. In his work he used both zinc sulfate and picric acid and found the latter much less irritating. Since the picric acid has been shown to be as effective as zinc sulfate in the protection of monkeys he advocates its use. As a result of his studies he is convinced that the Peet technic will be a failure in 75 per cent of the children because of the structure of the nose. Myerson believes that the instillation by gravity method is far superior and recommends the trial of a one per cent picric acid solution in this manner during epidemics of poliomyelitis.

The most recent issue of the *Journal of the American Medical Association* to date, carries a statement addressed to the editor of that publication to the effect that "there is at present no generally accepted preventive of poliomyelitis."

This statement has been endorsed by Josephine B. Neal, Sidney David Kramer, William H. Park, Thomas Parran, James P. Leake, and the medical board of the Willard Parker Hospital.²⁰

CONCLUSIONS

1. There is no accepted preventive treatment for infantile paralysis.
2. Until a distinction can be made between susceptibles and carriers of the virus there will be great difficulty in evaluating any proposed method. Until then one cannot be sure when a susceptible person has had contact with the active causative agent.
3. Monkeys have been given a high degree of protection by spraying the olfactory area with chemicals such as aluminum sulfate, picric acid and zinc sulfate.
4. The protection given to monkeys warrants the controlled use of such substances in young children in the presence of epidemics of poliomyelitis.

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DELAYED RESOLUTION IN BRONCHOPNEUMONIA*

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For the purpose of discussion it might be well to define the title of this paper. The definition is a clinical one and rather vague at best, but delayed resolution will be considered the failure of signs and symptoms of bronchopneumonia to clear up in a reasonable length of time after there has been a change for the better. I have deliberately avoided the use of the term "crisis" since a crisis is frequently absent in the typical course of this condition. This definition will make our subject somewhat comparable to delayed resolution in lobar pneumonia, which is defined as a failure of signs and symptoms to disappear in seven to ten days after the crisis.¹

We are all aware that it is far from simple to make a clear-cut distinction between lobar pneumonia and bronchopneumonia. In the final analysis it is really a pathologic distinction which is made in the autopsy room. From a clinical point of view we like to think of lobar pneumonia as a primary disease entity, characterized by a definite onset with a chill, pleural pain, high fever, and rusty sputum, terminated by a crisis, at least in a large proportion of the cases; while we think of bronchopneumonia usually as a complication of some other condition, such as measles, whooping cough, influenza, or just a common upper respiratory infection. The literature is strangely silent as to the incidence of delayed resolution in bronchopneumonia, which leads one to think that this incidence is not very definitely known. I believe we can agree from our own experience that it is higher than Osler's three to four per cent in lobar pneumonia.²

The bacterial etiology of bronchopneumonia is usually a pneumococcus, but almost any other organism found in the respiratory tract can be the responsible agent. The hemolytic streptococcus was frequently found during the influenza epidemic of 1918 with its high incidence of rapidly fatal bronchopneumonia. The *Bacillus influenzae*, the meningococcus, Friedländer's bacillus, and the typhoid bacillus may produce bronchopneumonia.

Conditions predisposing to delayed resolution are various. The age of the patient has an important bearing. This complication is more common in the very young and the very old. Reichle and Moritz³ describe a condition in very young infants which they call subacute peribronchiolar pneumonia. This could very easily be considered an unresolved bronchopneumonia. The debilitated

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

states predispose to this condition. There is a considerable difference of opinion as to the effect of syphilis. Kampmeier⁴ believes that syphilis is a frequently overlooked factor in delayed resolution in pneumonia, and cites cases to prove it. In his experience, treatment directed to the syphilis produces rapid improvement. Weinstein and Goodman,⁵ however, analyzed 509 cases of lobar pneumonia occurring in Baltimore, and came to the conclusion that there was no relation between syphilis and unresolved pneumonia; and that anti-syphilitic treatment had no effect in promoting resolution in those cases in which the Wassermann reaction was positive. Whether these conclusions can be carried over into the consideration of bronchopneumonia is open to question.

There is a type of chronic bronchopneumonia in infants, with resolution delayed for eight to ten months, or even longer, which is due to aspiration of oil.⁶ This is known as lipoid pneumonia and is sometimes very difficult to differentiate from a primary tuberculous infection. The feeding of cod liver oil with a spoon, and the use of nasal drops, are thought to be the direct causes of this condition.

It is well to review the pathology of lobar pneumonia as a basis of comparison to that of bronchopneumonia. We can recall the familiar stages of engorgement, red hepatization, gray hepatization, and resolution occurring in one or more lobes of the lung.⁷ The involvement of the lobe is homogeneous. As resolution takes place, the exudate is dissolved by proteolytic enzymes, and for the most part absorbed and eliminated through the kidneys. Bronchopneumonia is not so well adapted for didactic teaching. The pathologic findings are diffused areas of consolidation around the bronchioles, and the distribution is lobular rather than lobar. The bronchioles are frequently blocked with pus. There are areas of air-containing-lung between the patches of pneumonia. There may be small abscesses in which the lung markings are lost. In lobar pneumonia resolution starts at the hilus and works to the periphery; while in bronchopneumonia it starts at the periphery and works to the hilus. This can be appreciated if it is remembered that the inflammation in bronchopneumonia extends from the bronchioles, and recedes back to them. There is bronchoscopic evidence that areas of delayed resolution are sometimes distal to an occluded bronchus.⁸ This forms an area of atelectasis which becomes filled with exudate, and which will go on to resolution if the obstruction is relieved, and free drainage instituted. Another pathologic finding in delayed resolution may be an old area of bron-

chiectasis which has become filled with inflammatory products from a superimposed acute infection.⁹ A true pyemia following pneumonia may produce a localized abscess in the lung.

The symptoms of delayed resolution need little description; they are largely continuations of the symptoms of bronchopneumonia past the time when recovery should have occurred. There are persistent remittent fever, sweats, cough, and fast pulse, associated with failure to regain weight and strength. There is usually no pain. The physical findings are those of persistent consolidation, with dulness to percussion, increased bronchovesicular breathing, moist râles, and frequently displacement of the mediastinum toward the affected side. Usually the findings are in one of the lower lobes. The x-ray shows an area of cloudiness in the lung itself.

The diagnosis of delayed resolution is a clinical one, and is based upon the following points:

1. The history of preceding bronchopneumonia.
2. The persistence of symptoms after the acute condition has passed.
3. The physical findings of consolidation.
4. X-ray evidence of increased density in the lung.
5. The exclusion of other known conditions.

This last point is the most difficult and also the most important. In fact there are men who believe that there is no such thing as unresolved bronchopneumonia, but that all cases may be classified under other diagnoses. In my opinion it is largely a matter of definition.

DIFFERENTIAL DIAGNOSIS

1. Tuberculosis must be eliminated by the tuberculin test, and by examination of the sputum. Tuberculous bronchopneumonia is not uncommon.
2. Empyema can be differentiated by flatness to percussion, the absence of breath sounds, the x-ray picture, and by the aspiration of pus through the trocar.
3. Pleurisy with effusion is diagnosed by a flattening of the intercostal spaces, displacement of the mediastinum to the opposite side, absolute silence over the affected area, and the aspiration of fluid.
4. Frank lung abscess usually runs a more septic course, and the x-ray usually shows a more discrete area of increased density.
5. Malignancy of the lung can usually be eliminated by the history, in which the preceding acute pulmonary episode is not a typical bronchopneumonia. The sputum usually contains free blood.
6. Spontaneous pneumothorax is an occa-

sional complication of bronchopneumonia. It produces a fast pulse, dyspnea, dislocation of the mediastinum to the opposite side, low diaphragm, silence on auscultation, and tympany to percussion.

7. Bronchiectasis may give some difficulty, particularly if the area is small, and the foul sputum is absent. There is usually some history of antecedent lung trouble, such as frequent chest colds, with a cough that never entirely goes away. A beginning bronchiectasis can be diagnosed only by the passage of time, since it will persist in spite of treatment.

8. The various fungus infections are uncommon but can be diagnosed by a careful examination of the sputum.

9. Syphilis should be considered, and treated if found present, but probably has little to do with the consolidation in the lung.

10. Foreign body can usually be diagnosed on the history, the findings of atelectasis, and the presence of breath sounds that are audible at some distance from the patient.

11. Riesman's pneumonia¹⁰ can be differentiated by its long duration with low fever, and the presence of paranasal sinus disease. The findings are likely to be more lobar in distribution, and are confined to the lower lobes. Treatment of the affected sinuses usually effects recovery.

12. Lipoid pneumonia occurs in infants who have aspirated oil into the bronchial tree. The x-ray findings are suggestive of tuberculosis, but the tuberculin test is negative, and the course, while prolonged, tends to spontaneous recovery.

13. The possibility of atelectasis caused by a bronchus or bronchiole blocked by exudate or swelling should always be considered; indeed this is probably what is present in most of the cases which have not been eliminated into any of the above categories. Bronchoscopic examination will frequently show edema, redness in the bronchus leading to the affected area, and a plug of pus occluding it.⁸ Removal of this plug facilitates the cure of the condition. It is quite probable that those cases which do not show these findings on bronchoscopic examination have a similar condition, but it is so located that it cannot be visualized by our present equipment. At any rate, I see no immediate prospect of eliminating atelectasis as the true cause of most of the cases of delayed resolution in bronchopneumonia.

The prognosis is usually good, except in the very old, and the very young. The subacute peribronchiolar pneumonia of young infants³ has a very high mortality rate, and, of course, any long continued infection is hard on the aged. A stead-

ily downward course should lead the physician to reconsider his diagnosis.

There is no standardized treatment. Bed rest is positively recommended. The use of counter-irritants and simple expectorants with the idea of loosening the exudate should be tried.¹⁰ Postural drainage frequently is of benefit.⁸ Diathermy has been used with good results.¹¹ X-ray treatments have been very successful in the hands of some radiologists.¹² In fact, it would seem that the clinician should use his best judgment, trying first one thing and then another, as the course of the illness would seem to indicate.

In considering the whole problem of delayed resolution in bronchopneumonia it would seem likely that we are not dealing with a true pathologic entity, but a variety of conditions, which have been grouped under one heading for the sake of convenience, and probably because of a great deal of ignorance. There is a definite need for more clinical investigation under controlled conditions. So many of these cases are seen in the home where facilities for careful diagnostic studies are lacking. Under ideal conditions, we would have serial x-ray pictures on every case of bronchopneumonia. Bronchoscopic examination should be made on those who fail to recover promptly. It may be found that so-called non-resolution is really due to localized areas of atelectasis, or to occlusion of a bronchus or bronchiole. Treatment for this condition is bound to be empirical until the pathology is better understood.

SUMMARY

1. Delayed resolution in bronchopneumonia is a poorly understood condition, if it is a clinical entity at all.
2. Most cases of so-called unresolved pneumonia are probably atelectasis from bronchial obstruction.
3. More careful study of atypical chest conditions is needed.
4. Rational treatment must wait on scientific pathology.

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Discussion

Dr. J. L. Kestel, Waterloo: The period of development and the period of recovery in bronchopneumonia is much more variable, as Dr. Cole has stressed, than in lobar pneumonia. The physical and x-ray findings are sometimes slow in developing. One must be guarded about the prognosis in bronchopneumonia and even in bronchitis. It might be difficult to decide whether to call a prolonged case of bronchopneumonia one of delayed resolution, or simply a protracted case.

Dr. John C. Parsons, Des Moines: As you noticed, Dr. Cole expresses doubt that there may be a clinical entity called delayed resolution. In fact, he has conducted much research to show that delayed resolution is usually something else. In my own mind I am very sure that delayed resolution is confined to that very small percentage of cases for which one cannot find anything else to call it. In other words, one should not be content to call a case delayed resolution and rest there. If that term is used, one should try to find out what the condition is. There is probably no pneumonia case in which atelectasis does not at some time make an appearance, and it is perfectly possible for atelectasis to persist and create the disturbance which we call, loosely, delayed resolution.

Lipoid pneumonia cases are very interesting, and this condition is by no means confined to infants. We must remember that occasionally we see a rare case of an adult who is taking large doses of cod liver oil and large doses of mineral oil, in which there will be enough movement of oil throughout the system to produce some lung involvement. I am thinking now of a woman who had what was called a bronchopneumonia. She had taken a tablespoonful of mineral oil three times a day for a period of three or four years, and finally came in with a very mild bronchopneumonia which did not heal. Her sputum was loaded with microscopic droplets of oil. On stain, the sputum under the microscope looked as if somebody had spilled oil in it. After discontinuing the oil for nine or ten months, she became entirely well. That, I suppose, is delayed resolution. Under the circumstances, however, we have to call it lipoid pneumonia.

There is one danger in any suppurative pneumonia, empyema, lung abscess or any condition of a suppurative nature in those people who have a primary tuberculous complex. There is a certain amount of decalcification of the primary complex by the suppurative process. Therefore, there may be reinfection from that primary complex, because we all know that inside of those calcified nodes are living tubercle bacilli. A reinfective tuberculosis may appear after a suppurative process in the lung. We not uncommonly find lung abscesses which begin as suppurative proc-

esses and finally produce tubercle bacilli in the sputum.

I certainly agree with Dr. Cole that one should not be too proud to have an x-ray of the chest. It is just another diagnostic method which aids the physician in his task of making a diagnosis. Surely one cannot possibly feel that a complete chest examination has been completed until x-rays of the chest have been secured.

MANIFESTATIONS OF INSULIN HYPO-GLYCEMIA MISTAKEN FOR OTHER DISEASE IN PATIENTS WITH KNOWN DIABETES MELLITUS*

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In persons not known to have diabetes mellitus or in those with spontaneous hypoglycemia, the manifestations of a low blood sugar content may be attributed to drunkenness, epilepsy, cerebral accident, or various other diseases, but when they occur in persons known to have diabetes such manifestations are rarely mistaken for other diseases. It is for this reason that we are reporting two cases of known diabetes mellitus in which the symptoms of hypoglycemia were misapprehended.

CASE REPORT

Case 1. A white man, fifty years of age, entered the Urology Department of the University Hospitals, December 27, 1935, in a stuporous condition. He was known to have had diabetes mellitus for sixteen years and the disease was controlled at the University Hospitals in 1927 with 27 units of insulin daily and a diet which had a potential yield of 88 grams of glucose. He remained aglycosuric on this regime until September, 1935. At this time a persistent substernal pain forced him to remain in bed and glycosuria reappeared. The substernal pain gradually subsided and he felt improved generally. He was advised by his physician to test each voided specimen of urine and to increase the insulin dosage whenever glycosuria was found. He gradually increased the amount of insulin until the last two weeks prior to admission to the University Hospitals, at which time he was taking daily 75 units before breakfast, 45 units at noon, and 75 units at night. A week prior to this, however, (three weeks before admission) he began to have attacks of unconsciousness and continuous strangury. The attacks

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of unconsciousness occurred daily but varied in intensity. Certain of them were so mild that the family noted only that he "acted queerly." In others, he became comatose and on several occasions tonic and clonic convulsions were noted. Usually there was loss of the use of the arms, legs and voice for hours after he was apparently conscious. During the last week at home he gradually became stuporous and convulsions appeared more frequent. Morphine therapy was thought to have partially controlled the convulsions. The urinary stream became smaller and the quantity of urine decreased until two days before admission when he failed to void any urine. He was referred to the hospital with the diagnosis of uremia and prostatic obstruction.

Physical examination revealed a stuporous man who would respond to harsh command. The breath contained no uriferous or acetone odor. There was generalized muscular weakness on the entire left side and on this side the reflexes were sluggish. Bilateral patellar and ankle clonus were elicited. The heart was moderately enlarged; a gallop rhythm and frequent premature contractions were present. A systolic murmur of moderate intensity was heard at the apex and the arterial pressure was 126/94. Only 115 cubic centimeters of urine were obtained by catheterization and it contained no albumin, sugar, acetone, casts, leukocytes, or erythrocytes. The blood urea nitrogen was 16.1 mgm. per cent, creatinine 1.0 mgm. per cent, and uric acid 4.2 mgm. per cent. The blood sugar content was too low to be estimated. The patient recovered from the stupor immediately following the intravenous injection of 25 cubic centimeters of a 50 per cent solution of glucose, and during the next hour the muscular weakness and neurologic manifestations disappeared. The patient did not suffer again from urinary, neurologic or muscular difficulties while he was in the hospital. After he was transferred to the medical service, repeated electrocardiograms showed changes consistent with coronary artery disease. The urine became free of glucose with administration of a diet which had a potential yield of 172 grams of glucose, and regular insulin, 40 units before breakfast, 10 units at noon, and 25 units at night. The injection of 10 units of insulin at 3:00 a. m., however, was necessary for a few days.

Case 2. A white woman, thirty-two years of age, entered the Obstetrical Department of the University Hospitals, April 30, 1937. The patient had always been well until the onset of diabetes mellitus in 1932. She had taken insulin but had not followed any particular dietary regime. Dia-

betic coma developed in September, 1935, and again in December, 1936. After the last attack of coma protamine zinc insulin was prescribed and the dosage was gradually increased to 175 units daily. About the middle of February, 1937, at approximately 2:00 a. m., she had a convulsion which was followed by unconsciousness of eight hours' duration. Three more such attacks occurred on three successive days and ceased after the amount of insulin was reduced. She had no further symptoms until convulsions and unconsciousness occurred April 3, 1937, and recurred on April 17, 18, 19, and 29. A diagnosis of pregnancy was made at this time and she was referred to the University Hospitals with the tentative diagnosis of toxemia of pregnancy and diabetes mellitus. She denied, however, having had any headaches, visual disturbances, or edema. The patient was not certain of the time of day of the above attacks, the dosage of insulin, or whether or not food had been reduced or omitted on those particular days.

Physical examination revealed a well-developed and well-nourished woman. The uterus was enlarged to approximately the size of a four months' pregnancy. The arterial pressure was 105/70. There was no edema and the ocular fundi were normal. The urine contained no albumin, erythrocytes, leukocytes, or casts, but a moderate amount of glucose. The blood urea nitrogen, creatinine, and uric acid were normal. She was transferred to the medical service where the diabetes was difficult to control. Glycosuria disappeared after a few days with regular insulin, 5 units at 3:00 a. m., 30 units before breakfast, 15 units at noon, and 20 units at night, and a diet which had a potential yield of 172 grams of glucose. Ten days later pyelitis developed, and glycosuria reappeared and continued at irregular intervals in spite of various doses of insulin until the pyelitis subsided. She was discharged on the above dietary regime and insulin, 35-10-25 units daily. The patient returned to the hospital in September, 1937. In the interim she had followed the diabetic regime outlined above without the appearance of glycosuria or hypoglycemic symptoms. She went through a normal labor and delivered a healthy baby.

COMMENT

Joslin¹ and Wauchope² list several causes for the appearance of hypoglycemic symptoms in a patient with diabetes mellitus; first, the dosage of insulin may be too large either because of an inaccurate estimation of the amount of insulin, or because of an improvement in the patient's ability

to use glucose; second, the available glucose may be diminished by an increase of physical exertion, by postponement of food ingestion, by inadequate absorption of food which may occur with a diarrhea, or by a depletion of glycogen stores in malnutrition; third, the secretions of the pituitary, thyroid, or adrenal glands may become reduced; fourth, the patient may be hypersensitive to insulin; fifth, glycosuria resulting from a diminished renal threshold, may mask a hypoglycemia; sixth, persons with fluctuating blood sugar levels may develop hypoglycemia even though the dosage of insulin is insufficient to prevent glycosuria throughout the day; seventh, symptoms may appear with disease of the liver with or without lowering of the blood sugar; and, eighth, a rapid reduction of the blood sugar level in patients accustomed to long standing hyperglycemia may produce such manifestations.

The large doses of insulin in Case 1 suggest, but do not prove, that the hypoglycemia was due to excessive amounts of insulin. The available glucose apparently was not diminished. The patient had eaten well until the last week at home; he had reduced physical exertion to a minimum; diarrhea had not been present; and he was not malnourished. There were no manifestations of hypopituitarism, hypothyroidism, or hypo-adrenalism. He was not sensitive to insulin; the renal threshold was normal; and while in the hospital he did not have extreme fluctuation of blood sugar. The symptoms were due undoubtedly to abnormal reduction in the glucose content of the blood. During the symptoms when the patient was first admitted to the hospital, the blood glucose was too low to be estimated and symptoms did not appear with normal blood sugar levels. It was impossible to discover why the patient had increased the dosage of insulin to such a large amount. It was probably due to glucose appearing in the urine one or two hours before breakfast and continuing sufficiently long afterward that it was found in the morning specimen examined. Such was the case for the first few days while he was in the hospital. Strangury, which occasionally occurs in hypoglycemia, was apparently an important cause for the mistaken diagnosis in Case 1. Such symptoms appearing in an elderly man, particularly when accompanied by acute urinary retention, stupor, and convulsions are likely to be attributed to prostatic obstruction and uremia.

It is difficult from the available data to evaluate the causative factors for the hypoglycemic symptoms in Case 2. Several factors appear probable. In the first place, abnormal fluctuations of blood sugar levels occurred while she was in the hospital

and undoubtedly played a rôle. In the second place, there may have been fluctuations in the severity of the patient's diabetes resulting from pyelitis, since this occurred while she was under our observation, but the history does not indicate that pyelitis had developed before she came to the hospital. Then, too, the available glucose may have been reduced from time to time because of variations in food intake. It is necessary for a patient receiving insulin to eat a sufficient amount of food which has a potential yield of a certain quantity of glucose at each meal, and, if this amount of food is not eaten, hypoglycemia may develop. The patient stated that she was not weighing or measuring her food, that she was not following a constant diet, and that she did not know a certain quantity of food must be eaten at each meal if insulin is administered. Furthermore, she did not know whether or not the quantity of food ingested preceding the convulsions was less than on other days.

It does not appear very likely that manifestations of insulin hypoglycemia would be mistaken for toxemia of pregnancy in a patient known to have diabetes mellitus and who had no albuminuria, visual disturbances, or elevation of arterial pressure. The erroneous diagnosis was made apparently because of the occurrence of convulsions at different times of the day and night, followed by coma of several hours' duration in a woman who was pregnant and who had glycosuria. The nocturnal hypoglycemia was produced by protamine zinc insulin which is absorbed slowly and its effect is prolonged for from twelve to twenty-four hours, or longer. The resulting hypoglycemia may appear twelve to eighteen, or even twenty-four hours after the injection of protamine zinc insulin and it may develop insidiously. Coma and convulsions may appear without the patient being aware that the blood sugar level is low. A small carbohydrate meal is recommended at bedtime by most authors if protamine zinc insulin is administered. Hypoglycemia produced by protamine zinc insulin persists longer than that produced by ordinary insulin, and repeated administrations of readily available carbohydrates may be needed; whereas, manifestations of abnormally low blood sugar content due to ordinary insulin respond promptly to the administration of small amounts of carbohydrate.

Many physicians believe that blood sugar estimations are necessary for the proper control of diabetes mellitus and the above reported cases may appear to support such a contention. However, blood sugar estimations are not available to physicians in small towns and in rural districts. Therefore, many physicians regard the treatment of dia-

betes mellitus as a hospital procedure, and as impracticable in rural communities. Such an idea is erroneous and without going into the argument in detail, it can be stated that blood sugar estimations were not necessary for the proper control of the diabetes mellitus in the two cases reported. The second case, which was the more severe, was controlled entirely by examination of the urine. The apparent difficulties encountered before admission to the hospital in both cases could have been surmounted by examination of fractional specimens of urine. Fractional specimens of urine are obtained by dividing the twenty-four hour urine output into four different specimens. The urine voided between breakfast and noon is collected in the same container and is the first specimen. That voided from noon to supper is the second specimen. That voided from supper to bedtime is the third specimen, and that voided between bedtime and breakfast is the fourth specimen. As a rule, a patient with diabetes mellitus who is aglycosuric needs to examine only the morning specimen of urine. If glycosuria is present, however, all specimens should be examined. The presence or absence of glucose in the different specimens of urine indicate whether or not the dosage of insulin should be altered. For example, the persistent presence of glucose in the morning specimen alone indicates that the amount of insulin administered before breakfast should be increased. A continuous glycosuria in the afternoon is an indication for an increase in the noon dosage of insulin, etc. In both of our cases, when ordinary insulin was administered, glucose was found in both the night and morning specimens. It is obvious that an increase in the breakfast dose of insulin would not free the night specimen of urine of glucose. In both instances, five or ten units of insulin administered at 3:00 a. m., however, controlled the glycosuria.

SUMMARY

1. The manifestations of insulin hypoglycemia occurring in patients known to have diabetes mellitus and known to be taking insulin are rarely misapprehended.

2. Two such cases are reported in which the above manifestations were attributed to prostatic obstruction with uremia, and to toxemia of pregnancy.

3. A method for avoiding the difficulties encountered in the two cases, and the causes for occurrence of hypoglycemia in patients with diabetes mellitus are discussed.

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THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

METASTATIC BRAIN TUMOR

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Cerebral metastases are not uncommon and should always be considered in the differential diagnosis of intracranial tumors. Their diagnosis depends upon the demonstration of a primary tumor elsewhere in the body. While as a rule this may be comparatively easy, at times the growth may be so small or give rise to so few symptoms, it may be overlooked. The sequence of events in the case to be presented is obvious but it is of interest because of the interval from the time of the first diagnosis until the cerebral metastases became evident (eight years).

CASE REPORT

The patient, a white woman sixty-six years of age, was admitted to the Finley Hospital, April 8, 1938, because of weakness of the right arm and leg, difficulty of speech, headaches and involuntary defecation.

Family History: There was no history of inheritable or other significant diseases.

Past History: The patient had had the usual diseases of childhood but without complications. When sixteen years of age she had had a chronic infection of the right large toe which required amputation. At the age of forty-five years both fallopian tubes, one ovary and the uterus had been removed, but the pathologic record was not available. Tonsillectomy and partial thyroidectomy had been performed when the patient was fifty-four and fifty-five years of age, respectively. Following the last operation she had enjoyed good health for about three years.

Present Illness: Eight years before admission she had noticed a lump in her right breast. This was removed and diagnosed as carcinoma, but nothing else had been done at that time. Three years later the breast and axillary glands (but not the pectoralis minor muscle) had been removed because of bleeding from the nipple. At that time both the breast and the axillary lymph nodes were involved. Following the operation she again enjoyed good health except for a severe attack of typhoid fever with hemorrhages eighteen months before admission. A year later she had noticed a lump in the right axilla and suffered from a "cold" and aching in the joints. Six weeks later she had another "cold" and complained of pain about the left shoulder and in the left chest. During this attack she had a mild temperature

but continued to perform her household duties. A short time afterward she noticed weakness in her right arm. Five weeks before admission she fell and attributed it to weakness of the right leg. A week later the weakness of both the arm and leg became pronounced and she was forced to go to bed. At that time the temperature fluctuated between normal and 103 degrees. The weakness of the right side progressed gradually until she could only move them slightly at intervals. She began to complain of severe headaches on the top of the head and the family noticed that she had some difficulty in speaking. One week before admission she began to have involuntary bowel movements.

Physical Examination: The patient was a fairly well nourished female who appeared somewhat older than the given age. The skin appeared normal. The sclerae were clear and the pupils were equal in size; they reacted normally to light and accommodation. The lower teeth were in good condition, the upper ones had been replaced by a plate. The tonsils were lacking and the fossae were clean. The cervical lymph nodes could not be palpated. The thyroid gland was barely palpable beneath the scar. The breast amputation scar was normal, but a firm mass four centimeters in diameter could be felt in the right axilla. The left breast was symmetrical and on palpation no masses were felt. The left axillary nodes were not enlarged. The heart was negative on percussion and auscultation. Except for coarse râles in the bronchi and at the bases, the lungs were negative. There was tenderness along the ascending colon but no masses or other points of tenderness were found in the abdomen. No vaginal examination was made. Examination of the nervous system showed hemiplegia of the right side. The blood pressure was 140/80.

Course in the Hospital: The patient failed gradually but progressively, and died one month after admission.

Final Clinical Diagnosis: Right axillary and left cerebral metastases from carcinoma of the right breast; right hemiplegia.

Necropsy: The postmortem findings were summarized in the anatomic diagnosis.

Primary:

1. Carcinoma of the right breast; operations (excision of the tumor and later amputation of the breast and right axillary contents); axillary metastases.

2. Recurrence of the carcinoma in the right axilla and metastases to each lung, right kidney and the left side of the brain (See Figures 1 and 2).



Fig. 1. Photograph showing metastases in the right lung.

Subsidiary:

Arteriosclerosis, calcified Ghon tubercle, bilateral fibrous pleurisy, simple cyst of the left ovary, adenoma of the liver, operative scars (thyroidectomy, hysterectomy, salpingectomy and right

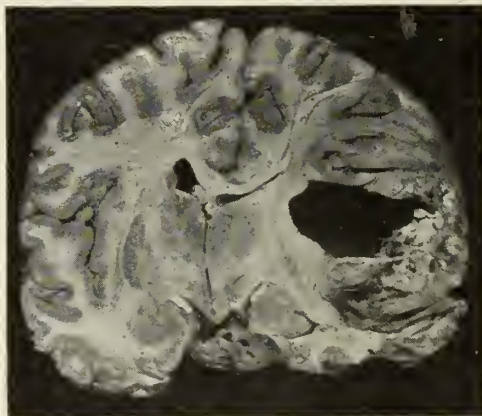


Fig. 2. Photograph showing metastasis on the left side of brain (anterior vein).

oophorectomy) postoperative abdominal adhesions.

Comment: In the final phases this case was one of gradually increasing weakness and finally of right hemiplegia accompanied by headaches in

an elderly woman with a normal blood pressure. While at this age the most common cause of hemiplegia is cerebral hemorrhage, the gradual onset and extension of the paralysis was against such a diagnosis. The history of the excision of a small cancer from the breast and of removal of the breast after an interval of three years with recurrence in the axilla after five years, made the diagnosis of cerebral metastases the obvious one. Another point worthy of comment is in regard to the treatment of the original tumor. Undoubtedly it was of low grade malignancy and it is very probable that if the radical operation had been performed at once, rather than after a delay of three years, cure would have resulted.

DISCUSSION

It is generally recognized that any malignant tumor may metastasize to the brain, but lung, breast and kidney carcinomas as well as melanomas of the skin or retina are especially prone to do so. According to Bailey¹ it is difficult to obtain exact figures on how often different types of tumors metastasize to the intracranial cavity. He states that they occur in about five per cent of necropsies while neurosurgical statistics indicate only about four per cent. He believes that their actual incidence is greater and that the low percentage found in neurosurgical clinics is due to the fact that only those in which the primary source has not been discovered are referred there for study.

Meagher and Eisenhardt² found 57 metastatic tumors (three per cent) in a series of 1,850 verified intracranial tumors at Cushing's Clinic at the Peter Bent Brigham Hospital. Of these 44 were carcinomas, four hypernephromas, and nine were classified as sarcomas. The primary sites of the forty carcinomas are shown in the following table:

Primary focus	No. of cases	Per cent
Breast	10	25.0
Lung	14	35.0
Mouth and sinuses.....	2	5.0
Liver and intestines.....	2	5.0
Generative organs	1	2.5
Kidney	1	2.5
Primary focus unknown..	10	25.0

From the above it is evident that the lung and breast are the most common sources of tumors giving rise to intracranial metastases. Cancer of the lung is often insidious and evidence of intracranial tumor may be the first indication of the disease. Therefore, it is important to make an especially thorough examination of the lung in all cases of intracranial tumor. Breast cancer is

generally diagnosed before the onset of intracranial symptoms. In the authors' series of ten cases, the average period from the breast operation to the onset of intracranial symptoms was three years and ten months. The shortest period was thirteen months and the longest eleven years and nine months.

Shields and Witham³ in an intensive study of the distribution of metastases in breast cancer found that practically every organ and tissue in the body may be affected. They noted that late metastases in treated cases are likely to be single and that bone, brain and lung are particularly frequent sites of the metastatic growths. They concluded from their studies that while blood borne metastases occasionally are seen, usually metastases are due to emboli in lymphatic channels. However, it should be pointed out that from the lymphatic stream the cancer emboli are almost certain to reach the lung where they lodge, or passing through may reach the brain or other organs by way of the blood stream. We believe that is what occurred in our case. From the recurrence in the axilla, cancer cells were carried to each lung and then to the right kidney and to the brain.

Diagnosis:

The symptoms of metastatic tumors do not differ essentially from those of primary tumors. Bailey noted that headache and mental confusion are often out of proportion to the intracranial tension in metastatic tumors. If there is a history of a primary malignant tumor or if one can be demonstrated by physical or x-ray examinations, a probable diagnosis can be made. This fact emphasizes the need for complete examinations of all patients with brain tumors.

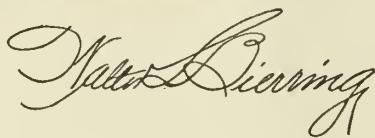
Treatment:

The treatment of metastatic cerebral tumors is, of course, limited since the metastases are often multiple. An intracranial operation is usually not advisable. Rarely a single metastatic growth may be diagnosed and such an operation may prolong the life of the patient. Bailey states that decompression is not advised because the relief afforded lasts only a short time. Therefore, every effort should be made to prevent the metastatic lesions by early diagnosis and effective eradication of all malignant tumors before local metastases have occurred.

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STATE DEPARTMENT OF HEALTH



UNFAVORABLE REACTIONS TO ADMINISTRATION OF ANTISYPHILITIC DRUGS

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The administration of antisyphilitic drugs to a patient on the basis of positive serology alone, is not the goal of the medical profession. In other words, following a routine of administering drugs because of a laboratory diagnosis is not "good medicine." That the person with a laboratory diagnosis must be regarded as a distinctive personality and treated as an individual, needs little comment. If a physician has lost familiarity with the interpretation of heart sounds or palpation of the abdomen or with ophthalmoscopic examination, he must be prepared to get this information from a competent colleague. One cannot evaluate the results of antisyphilitic therapy unless one knows the pathology which was present at the time he inaugurated treatment. Most important is the necessity of knowing whether or not treatment in itself is likely to cause grave consequences because of pre-existing pathologic conditions.

Complete Physical Examination Necessary

The first and most important measure with regard to reactions is their prevention. This can be accomplished only by a thorough evaluation of the patient as an individual human being. A reaction might be defined in general as a response of a body to a stimulus. It might well be conceived that the degree of stimulation, the nature of the stimulus, the path of entry, and the mode of approach, would all have a definite bearing upon the effect or the degree of reaction. This is indeed true in the chemotherapy of syphilis.

The Intravenous Route

The usual method of administering the arsenical compounds, viz., intravenously, is the most rapid, most effectual and most complete method of making the drug available to the tissues. When administering early treatment to a patient with a recently acquired syphilis, one must bear in mind; first, that the blood stream is suffused with the

Treponemata; second, that the Treponema is powerful and insidious in its action; and third, that drastic action is imperative. Bearing these facts in mind, Ehrlich and those who followed him prepared a very powerful, semi-toxic drug, and made it immediately accessible to the blood stream itself. It is only to be expected, with such a powerful agent working on the blood stream, that reactions are at times bound to follow. Add to this, the knowledge of the fact that one can always expect a Jarisch-Herxheimer reaction of some degree, which is actually a sudden arousing or exacerbation of the pathologic processes caused by the organism. With this in mind the physician must know if this sudden exacerbation of the pathologic processes can be withstood. A sudden lighting up of a syphilitic laryngitis may easily cause death from strangulation as well as the noteworthy "therapeutic paradox" (the medicine cured him but the patient died) which results occasionally from the Herxheimer effect on a syphilitic aortitis.

Reactions might be classified as follows:

I. Preventable.

A. Those due to faulty technic.

1. The nitritoid crisis (angioneurotic symptom complex).
2. Extravenous injection of an arsenical.
3. Intravenous injection of a heavy metal.
4. Incompletely sterilized instruments or tubing.
5. Acid arsphenamine.
6. Stomatitis.

B. Those due to incomplete diagnosis.

1. Serious Herxheimer reactions.
2. Optic atrophy from tryparsamide.

II. Non-Preventable.

- A. Arsphenamine dermatitis (exfoliative dermatitis).
- B. The "ether odor" of the arsphenamines.
- C. Gastro-intestinal reactions.

Space does not permit a thorough discussion of the above reactions. It must suffice to name them and to discuss those of greater import. When administering the first arsenical treatment to a pa-

tient with a recently acquired syphilis, one must bear in mind that the body is already infected in its entirety with the Treponema and that syphilis is always a general infection, never local. As previously stated, we must expect reactions. Fortunately either the nitritoid reaction or the so-called Jarisch-Herxheimer reaction is usually transient and while the former is sometimes alarming, neither of the two is of serious consequence in early syphilis. The Herxheimer reaction may be a visible flare-up of a secondary eruption with a chill and fever of no great significance, or in late syphilis it may be an edema of the wall of a coronary artery with occlusion and sudden death.

The Nitritoid Crisis

The nitritoid crisis or angioneurotic symptom complex is characterized by the patient feeling hot, having palpitation and a sense of oppression. The first symptom is usually suffusion of the conjunctivae which should be watched throughout each first injection. If this appears, the treatment should be interrupted at once and the reaction will be mild. If, however, the administration of the drug is continued, some or all of the following symptoms may appear: cutaneous flushing, choking cough, cramp-like lumbar pain, fall in blood pressure. More rarely edema of the face, tongue and glottis, or a generalized urticarial eruption may occur. There may be syncope, with thready, almost imperceptible pulse; the patient becomes alarmed with a sense of impending death and even the physician may become alarmed. Instances of death have been reported but they are very rare. Even if untreated, the reaction usually passes off in twenty to sixty minutes, leaving the patient no worse for his frightening experience. However, ten minims of adrenalin, solution 1:1000, will afford prompt relief.

When the nitritoid reaction has once occurred there is reason to suspect that it may recur and all subsequent injections must be given very slowly through a fine gauge needle, and with diligent attention to the condition of the patient. One should watch for flushing of the face or other significant signs. If these precautions fail, the patient can be given 0.6 of a cubic centimeter of adrenalin, solution 1:1000, intramuscularly five minutes before this injection. Patients with hypertension or cardiovascular syphilis must be expected. If adrenalin is contraindicated, the nitritoid reaction may often be prevented by a change from arsphenamine to neoarsphenamine or from neoarsphenamine to silver arsphenamine. Nitritoid reactions have been placed under the heading of those caused by errors in technic. While this is not entirely true, we do know that when injec-

tions are given very rapidly, through large gauge needles, and when the arsenical preparation is not completely dissolved, the incidence of this terrifying experience is much greater.

Extravenous Administration of An Arsenical

If any of the arsphenamines except sulpharsphenamine are injected into the tissue extra, rather than intravenously, there is immediately a sharp burning pain at the site of injection. This occurs most frequently during unsuccessful attempts at intravenous administration and there immediately follows a sharp pain at the site of injection, accompanied by a small lump at this spot. If the injection is interrupted at once and only a drop or two has been injected, the patient will have a sore arm for a few days with no further trouble. If more than this amount is spilled the patient will develop an edema, intense pain and loss of mobility of the arm. If sufficiently extensive, a central sloughing may occur, which requires months to heal; crippling deformities due to fibrous scars may ensue requiring plastic operation. The best treatment of this accident is by its prevention. If the injection is interrupted immediately at the first complaint of burning pain, serious trouble will be avoided, or if a lump appears it can often be "milked out," and bleeding from the needle puncture should be promoted by gentle pressure.

Accidents During Intramuscular Injections

Inasmuch as intravenous medication is usually a fairly difficult procedure one seldom thinks of it as an accident. However, if in an attempt to give an intramuscular injection of heavy metal, a vein is punctured and the medication which was intended for the intramuscular tissues is injected into a vein, alarming consequences may result. This is an altogether too frequent experience and its avoidance should command the clinician's most diligent effort. The dangers to be encountered here are oil embolism manifested clinically by tightening of the chest, uncontrollable coughing and sometimes grave shock. If an artery is entered, there may result many small oil emboli in the arterioles, with severe local pain and a skin eruption which Moore compares to cutis marmorata or marbled skin. These accidents, like the perivenous injection of an arsenical, are best treated by prevention. In other words, after inserting the needle into the muscular tissues, one should never inject a heavy metal into the muscles without first pulling the plunger back and holding it for at least ten seconds before injecting the drug. If blood appears, the needle should be withdrawn and a new site selected. Accidents due

to incompletely sterilized instruments, needles, or syringes are too obvious to merit discussion. Reactions due to rubber when arsphenamine is given, are characterized by nausea, vomiting, diarrhea and headache. These symptoms disappear in a few hours but may be prevented by soaking the rubber tubing in a four per cent solution of sodium hydroxide for from five to six hours, followed by thorough rinsing before the first sterilization.

Acid Arsphenamine Reaction

The serious consequences of acid arsphenamine, namely an immediate sense of oppression, pain in the chest, untractable coughing, syncope, circulatory collapse, and often death, always occur with such lightning rapidity that even if there were a specific treatment, it could hardly be used. However, if the patient does not die, he can be stimulated with adrenalin, external warmth and oxygen inhalations. We cannot stress too strongly the importance of being sure that old arsphenamine is not mistaken for neoarsphenamine. These drugs should never be kept in the same cabinet or even in the same room. A physician should preferably not give arsphenamine on the same day neoarsphenamine is given. Any additional procedure to insure the one arsenical against being mistaken for the other, should be used.

Stomatitis from bismuth is of importance only from the standpoint of appearance and usually will not develop if proper mouth hygiene is used. Serious Herxheimer reactions, that is, laryngeal occlusion or rupture of an aneurysmal sac, are due mainly to the fact that an arsenical was used before the patient was examined, since either of the two conditions exacerbated by this reaction could easily have been found on examination and the initial treatment changed to a bismuth or mercury preparation. In order to prevent complete optic atrophy which occasionally ensues following the administration of tryparsamide, it is necessary for the syphilologist and the ophthalmologist to cooperate in every way. If the visual field has been examined by the eye specialist and pronounced normal, there need be no fear of blindness following the administration of the drug. The garlic taste or ether odor during the intravenous administration of an arsenical can be prevented by having the patient chew a clove or a mint. In any event it is of no serious consequence. Gastro-intestinal reactions, unless prolonged, are of no special importance. They may be partly or entirely psychic; they rapidly disappear and can often be prevented by giving the patient some candy or a teaspoon of simple syrup before the injection is started.

Arsenical dermatitis has not been given the attention in this article that it deserves, due to lack of space. It is an entity with which a great deal can be accomplished both by prophylactic and therapeutic approach. If early signs are recognized and the arsenical changed or discontinued, no serious late effects will ensue. If one is in doubt, it is advisable to obtain a dermatologic consultant rather than to attempt to put out the fire by adding oil to it.

TWO MORE CASES OF SPOTTED FEVER

A case of Rocky Mountain spotted fever was reported to the State Department of Health, July 13, by R. E. Gunn, M.D., of Boone, in Boone County. On June 23, the State Hygienic Laboratory reported a positive Weil-Felix agglutination reaction on a serum specimen sent to the laboratory by R. E. Dwyer, M.D., of Preston in Jackson County.

Boone County Case

Dr. Gunn's patient, a boy three years of age, had onset of illness on July 7, with fever, sore throat and general discomfort. The patient was drowsy in the daytime, restless at night. A discrete, macular rash appeared on the face, wrists and lower legs, beginning July 10; the rash later became generalized. On July 15, the petechial areas affected chiefly the arms and legs, with more scattered distribution on the body. The macules were brown, minute to cherry seed size and irregular in outline; some of the lesions were slightly elevated. There was slight ankle clonus on the left side. The left upper arm showed a scar as evidence of successful vaccination against smallpox. The patient's condition grew more serious after July 15. The cutaneous lesions became much more profuse, abdominal discomfort and distention were marked, fever was high and the leukocyte count was 20,000. The patient, apparently in a critical condition, was hospitalized, laparotomy was performed and an inflamed appendix was removed. On July 28 the patient was reported as convalescing satisfactorily. A home visit was made July 15, by a representative of the State Department of Health, together with the attending physician. Significant from an epidemiologic standpoint was the fact that the patient's home is in the country and that his mother removed a tick from his scalp on July 12, five days after onset of illness. Dragging of the vegetation with canvas, in the vicinity of the patient's home and in the district school yard, directly across the road, yielded one tick. A recent period of dry weather possibly accounts for the fact that no

(Continued on page 420)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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505 Bankers Trust Building, Des Moines

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII AUGUST, 1938 No. 8

THE NATIONAL HEALTH CONFERENCE

Those who have steadfastly predicted extension of federal participation in the field of health until it included all classes of people in all phases of medical practice have had their forecasts supported by the recommendations of the National Health Conference which met in Washington, D. C., July 18, 19, and 20. This conference, per se, had its origin in President Roosevelt's Interdepartmental Committee which was appointed after the passage of the Social Security Act in 1935. The committee consisted of an assistant secretary from the Departments of the Treasury, Interior, Agriculture and Labor, and Arthur J. Altmeyer, the chairman of the Social Security Board. It was instructed to study the possibilities of a national health program and make a report. This report was made in February, 1938, and has been the inspiration for many press articles and much discussion because of its sweeping indictment of deficiencies in medical care, its failure to give only meager credit to accomplishments of medical practice in this country, and the committee's definite trends toward a program supported by tax funds. This report and the implications thereof were discussed before the annual meeting of the Iowa State Medical Society in May by the Rev. Alphonse M. Schwitalla of St. Louis.*

The recent conference was called several months ago and consisted of about 165 people representing labor, agriculture, social workers, the press, women's civic organizations, public health, and the nursing, dental and medical professions. The recommendations which were presented at the conference for consideration were prepared by a technical subcommittee consisting of the

chief of the Children's Bureau of the Department of Labor, three doctors from the United States Public Health Service, and a statistician of the administrative group in charge of the Social Security Act. As a basis for its recommendations the committee reports that "deficiencies in present health services fall into four broad categories:

1. Preventive health services for the nation as a whole are grossly insufficient.
2. Hospital and other institutional facilities are inadequate, * * * and financial support * * * is both insufficient and precarious, * * *.
3. One-third of the population, including persons with or without income is receiving inadequate or no medical service.
4. An even larger fraction of the population suffers from economic burdens created by illness."

To meet these deficiencies the committee recommends a program estimated to cost the federal government \$850,000,000 annually, this amount to be matched by participating states. The program contemplates large additions for what have hitherto been known as "public health services," large amounts to provide hospital services and medical care for mothers and children; new hospitals to provide 360,000 beds; and 500 health and diagnostic centers. Expansion of "general public health services" would include support of extensive administrative organizations in public health, control and treatment of tuberculosis, venereal diseases, pneumonia, cancer, malaria, mental hygiene and industrial hygiene. Provision for maternal and child hygiene would consist of medical care for all mothers and children in all parts of the country.

The committee finds hospital facilities and organizations "ill adapted to the varying needs of people," and "wide areas—some 1,300 counties," without adequate hospital accommodations. This is in interesting contrast to the map recently published in the *Journal* of the American Medical Association,† showing the distribution of hospitals in the United States. This map shows that 98.5 per cent of the population lives within thirty miles of a hospital. Unfortunately information of this character was not permitted to be given at the recent health conference, in answer to the committee's recommendations for new hospitals. Evidently this conference was of a "supporting" nature; one of those gatherings in which the blue prints are presented for approval, not for discussion with the thought of changing them! The committee's recommendations also include plans for payment for loss of time due to illness with the suggestion that temporary disability insurance

*Schwitalla, Rev. Alphonse M.: Medical economies. Jour. Iowa State Med. Soc., xxviii:261-266 (July) 1938.

†Editorial: What is adequate hospital service? Jour. Amer. Med. Assn., exl:257-258 (July 16) 1938.

can be established in a manner similar to unemployment compensation, while permanent disability insurance can be developed through the system of old age insurance.

Thus we have recommendations for a scheme of medical care by the government as complete as that of public education. There is a vast difference, however, in this respect; local school funds are under local jurisdiction, and management is not responsible to remote control from Washington. Students of economic trends have a well crystallized opinion that the federal administration will use a national health program as an "ace in the sleeve" if and when the time comes that the administration's popularity will require a new measure for getting the popular vote. They have precedents in Bismarck's health scheme for Germany and Lloyd George's panel system for England. Those who believe thus regard the recent health conference as a part of preparations for such an emergency. This viewpoint is supported by a prominent Washington, D. C., business reporting service, whose letter of July 23 contains the following paragraph:

"Doctors and the New Deal: The President's health conference here this week fanned into flame the issue of socialized medical care which has been smouldering for several years. The outlook is that government will work steadily toward more socialized health services for masses. One reason is the need for useful jobs which the relievers can perform. It is assumed that large WPA corps will be permanent, and aim will be to develop new public services (such as health) as means of employing the unemployed in ways to give taxpayers something for their money. Program is BIG—Billions. Plan is to start at 850 millions a year. Most doctors will fight it, and may take their turn as 'whipping boys.' But socialized medical care IS on the way."

The committee's proposal would do away in large part with the personal payment of fees for medical services as at present. The government would take the money as taxes and provide the service according to its judgment. This would inevitably be another chapter in bureaucracy with a certainty of untold costs of administrations and an equal certainty of poor quality of medical services. With the rapid development of government as a regulating master of many daily activities of our people, much of the committee's recommendations may become reality. If the profession is going to resist it intelligently this writer believes that the issue should be met immediately and far afield from congressional halls. Resistance should be by intelligent discussion with taxpayers and

legislative candidates in every county and congressional district in the United States. In these discussions it is very essential that organized medicine indicate its readiness to participate with local units of government in the care of indigent people and those of the low income group.

Everyone should read the recommendations of the technical subcommittee of the conference,* as well as the editorial which accompanies the report and gives an excellent idea of the manner in which the conference was conducted. This editorial states that the conference did not adopt any resolutions; therefore, the technical subcommittee's recommendations were not formally approved by the conference. The editorial also points out that Mr. Altmeyer stated if the American Medical Association had any recipes to offer they would be reviewed before "putting the mess into the oven." He who assumes any security in this statement is on false ground. Actions speak louder than words, and at no time has the government shown any inclination to seek advice or information from the American Medical Association. Furthermore, formal action by the conference is wholly unnecessary. This conference has done its bit of cultivation. All that remains is for the social group to write the proposed bills and place them in the hands of sympathetic Congressmen for introduction into the next session.

The writer believes that any effective persuasion against this program must be done in the county units of the United States. Every county medical society should discuss the proposed program with taxpaying citizens, local newspaper men, and all prospective members of state legislatures and Congress. Knowledge of the proposals should be developed at home and through the country press; we should not wait for "pabulum" from Washington and be fed by the metropolitan press downward. Every prospective member of the legislatures and Congress should know of this proposed program before election. May the people and our profession know what is proposed and make their choice in the democratic way!

*Report: Jour. Am. Med. Assn., cxi:426-454 (July 30) 1938.

THE TONSILLECTOMY PROBLEM

During the summer months every physician is confronted with the problem of deciding the advisability of tonsillectomy and adenoidectomy in many of his child patients. It seems justifiable, therefore, again to review the indications for tonsillectomy and to mention what may reasonably be expected of this surgical procedure.

It is the firm judgment of the writer that the

family physician who knows the child and who is intimately acquainted with the physical status of the individual is in a better position to decide this question, than is the specialist who on one occasion examines the nose and throat and promptly makes a diagnosis. The indications for tonsillectomy are for the most part clear cut, and may be classified in the following categories:

1. Obstruction to normal breathing by hypertrophic tonsils and adenoids.
2. Recurrent tonsillitis.
3. Recurrent cervical adenitis.
4. Recurrent otitis media or sinus disease.
5. Systemic conditions, such as acute hemorrhagic nephritis, rheumatic fever, arthritis, etc.

Unless the tonsils and adenoids jeopardize the health or life of the patient, there is no indication for tonsillectomy. The promiscuous prophylactic removal of tonsils just because they are tonsils and are accessible to a wire loop is inexcusable abuse of the physician's prerogative. When parents relinquish a well child to the physician for tonsillectomy a serious responsibility is assumed, and the procedure should not be taken lightly. Before surgery the patient should have a complete physical examination to exclude evidence of active infection and to assure his fitness. Urinalyses should always be done. The fallacy of relying on a coagulation time test without determining the bleeding time is entirely too common a practice.

Appraisal of the results of tonsillectomy over a period of years indicates clearly that the procedure is not a panacea. It will not correct bad habits or end disciplinary problems. It fails to make the thin fat, and the fat thin. If, however, the tonsils are removed because of reasonable specific indications, then beneficial results may and do follow. According to Turnley of the Manhattan Eye, Ear and Throat Hospital in reviewing 76,000 adenotonsillectomies performed during a period of six years, the incidence of sore throat is reduced 90 per cent, otitis media in childhood is reduced 95 per cent, and sinus infections are benefited in a general way. Children with a general systemic run down condition are tremendously improved. Harold D. Smith of the Boston Eye and Ear Infirmary reports 90 per cent improvement in colds, while Kaiser of Rochester, New York, reports 50 per cent improvement in colds. The same authors report respectively, 100 and 53 per cent improvement in cervical adenitis.

According to Kaiser, who has studied the tonsil problem as related to rheumatic fever over a long period of years, practically all children with rheu-

matic infection should have their tonsils removed. This author states there is statistical evidence to show that tonsillectomized children are somewhat less likely to develop rheumatic disease. Recurrent attacks of rheumatism are, however, not influenced by tonsillectomy. The mortality rate in 600 rheumatic children was nearly twice as high in the children whose tonsils were in at the time of the initial attack as in the tonsillectomized group. Martha Hardy in a study of 238 Joliet, Illinois, students, repeatedly examined during the ages of eight to twelve or thirteen years, and again examined at the ages of twenty and twenty-one years, reports that "results of this long term investigation have no conclusive evidence of outstanding differences in general health status between young people whose tonsils were removed in childhood and those who were advised to have the operation but did not follow the physician's recommendation."

If we may judge by the literature it seems clear that the tonsil question is not a closed book. The practicing physician must analyze each individual patient and recommend tonsillectomy only when specific indications exist. The operation is never an emergency; it is not such a minor surgical procedure as some would have us believe, and it is not without hazard. The careful clinician will exercise every precaution and be sure of the fitness of his patient before subjecting him to tonsillectomy.

TRANSACTIONS OF THE A. M. A. HOUSE OF DELEGATES

The proceedings of the House of Delegates of the American Medical Association are of the greatest importance to every member of the medical profession. For this reason the JOURNAL submits this abbreviated summary of the more significant of the transactions which occurred at the San Francisco session.

Dr. Van Etten, speaker of the House, in his opening forceful address to the House, said, among other pertinent things, "The American Medical Association was created for the protection of the public from the misrepresentations of charlatans and quacks, for the promotion of the science and art of medicine, and for the betterment of the public health. Are we carrying on in the spirit of the founders?"

"Evolutionary changes are inevitable, but representing, as you do, all of our states and territories, these changes are not likely to be revolutionary responses to the excitement of occasional individuals among our more than 109,000 members, or servile responses to inspired propaganda.

When county societies become interested in new medical service plans and transmit their ideas to state societies, which in turn send them to your sessions, you will discuss them as you have always done, and when a majority of you approve they will be adopted and carried out by your executives.

"You elect the officers and trustees and they report to you. They do not originate policy. You make the policies, and the officers and trustees are obligated to execute them. If your policies are not carried out to your satisfaction, you may replace your officers. On your shoulders rests the fate of the American Medical Association."

Too often, we are inclined to believe, the average physician, back in his own community fails to think clearly of the medical organization of which he is an integral part in the terms as defined by Dr. Van Etten. He is too likely to regard the American Medical Association as being synonymous with the central administration office in Chicago, and to feel that it is beyond his power of influence. These words of Dr. Van Etten should bring sharply to our attention the importance of the county medical society as the fundamental unit in the national organization, and should remind every individual physician that through the county society he is provided with a means for full expression of his ideas and views.

The retiring president, Dr. Upham, and the incoming president, Dr. Abell, both addressed the House. It may be fairly assumed that the addresses of these men sounded the official policy trends which organized medicine ought to pursue. Each of them readily admitted that the depression years of the last decade had brought on complex social and economic problems involving medical care to people in the low income and indigent levels, which demand much study and thought before any attempts at remedial measures should be undertaken. Regarding the proposal for the use of federal funds we agree thoroughly with the statement of Dr. Abell that, "If such a change is to come, it is essential, both for the future progress of medicine and for the welfare of the groups to be served, that the distribution and direction of such funds be made neither under political control nor under lay domination. The health of the nation should neither be made the football of politics nor consigned to the fallacious judgment of those who, regardless of their sincerity of purpose, are untrained in the intricacies of its care." Both officials expressed the opinion that we shall be in a much better position to decide what should be done when the Association's study into medical needs, now in progress, is completed.

Of the numerous resolutions introduced, and

the subsequent action taken upon them by the delegates, only a few of the more important need be mentioned. Approval was granted a resolution that the medical profession condemn the sale of sulfanilamide over the counter and its use by the public, except when prescribed by a physician and taken under his observation. Several resolutions were introduced regarding the practice of medicine in hospitals by radiologists, pathologists and anesthetists, to the effect that standards be established and principles of ethics where involved be reaffirmed. Because of the vital concern of these problems to the medical profession and their increasing acuteness due to the rapid extension of systems of group hospital insurance, the House of Delegates recommended that the Council on Medical Education and Hospitals, jointly with the Bureau of Medical Economics, undertake a study of the entire matter. It was suggested that if the study revealed Council approved hospitals were exploiting the public or profession, such approval might be revoked. Also committed to the Bureau of Medical Economics for further study was a resolution on fee schedules submitted by Dr. Roberts of Georgia. This resolution requested that the American Medical Association declare itself on certain controversial points, among which are:

- "1. The advisability of or necessity for fee schedules in the public interest.
2. Their ethical or unethical qualities.
3. The necessity for certain fixed principles to guide constituent units of the Association when and if it is deemed, in the public interest, necessary to adopt such a device, and
4. Whether such schedules, approved by constituent units of the Association, should or should not provide for elasticity so as to permit of adaptation to wage levels, specialized medical services, variations based on differential costs as between urban, semi-urban, and rural practice, and other related considerations."

A resolution recommending amplification, clarification, codification and revision of the Principles of Medical Ethics was referred to the Judicial Council, which in turn recommended postponement of action and was upheld by the Delegates. Indiana introduced and received approval of a resolution directing the Bureau of Health Education of the American Medical Association to bring the Indiana plan for a national health program to the attention of the medical profession and the lay public through all available channels. The program is one of professional and lay health education, seeking to make preventive medicine an integral part of organized medicine and individual

private practice. Essentially the plan embraces the idea of definite leadership being assumed by the state and county medical societies in programs for preventive medicine.

In response to an invitation from the Board of Trustees, a communication from Miss Josephine Roche, Chairman of the Interdepartmental Committee to Coordinate Health and Welfare Activities of the Federal Government, was read by Dr. Draper of the United States Public Health Service. Essentially the report dealt with the results of the national health survey conducted by the United States Public Health Service which allegedly revealed a shocking deficiency of medical care among poorer classes, and with the National Health Conference (held subsequently on July 18, 19 and 20 and commented on elsewhere in this issue), designed to discuss ways and means of combating these deficiencies. Immediately after Miss Roche's paper, Dr. Braasch, chairman of the advisory committee on supply of medical care, reported upon the progress of the Association's nationwide survey into the actual supply of medical care. Upon completion of this study, comparison with the several government conducted surveys will be possible. Until then it is to be hoped that the officials of the medical profession may be able to hold in check the embarkation of federal agencies into a wholesale spending orgy which may possibly be of great harm to the future course of medicine and medical practice in the United States.

At the close of the session, Dr. Rock Sleyster, Wauwatosa, Wisconsin, was named president elect; Dr. Howard Morrow of San Francisco, vice president; Dr. Olin West of Chicago, secretary; Dr. Herman L. Kretschmer of Chicago, treasurer; Dr. Harrison H. Shoulders of Nashville, speaker; and Dr. R. W. Fouts of Omaha, vice speaker. St. Louis was selected as the place for the 1939 annual session, New York City for the 1940 session, and Cleveland for the session in 1941.

PROGRESS OF THE SURVEY OF MEDICAL CARE*

With the meeting of the officers of the fifth councilor district and the members of the Boone and Story County Medical Societies in Boone, July 19, the active participation of the Iowa State Medical Society in the survey of medical care began. At this meeting the general principles of the survey were discussed, each blank was taken up in detail, and information desired on the blank was outlined. The individual members,

county society officers and officials of the state society present had their knowledge of the program increased and many of the questions in their minds answered. On July 28, at Waverly, officers of the first councilor district met with the Bremer County Medical Society and a similar discussion was carried on. The counties in these districts are now actively engaged in the program. On August 4 at Okoboji, the second, third and fourth councilor district officers are planning to meet at the time of the Upper Des Moines Medical Society session and discuss the program. Soon thereafter meetings are being scheduled for the sixth and seventh districts at Cedar Rapids, the eighth and ninth at Fairfield and the tenth and eleventh at Creston or Red Oak. This series of meetings will be concluded by the latter part of August, and September should find most of the surveys completed.

The experience of other state societies in conducting the survey has shown that it is essential to have the members of the societies well informed before the blanks are distributed. Following the district meetings, it is suggested that each county society hold a meeting, urging the attendance of every member. At this meeting the general outline of the survey should be presented, and the various blanks should be discussed in detail. Each society should appoint a special committee, if none already exists, which will be responsible for the survey in the county. This committee must see that all physicians in the county, members or non-members, are supplied with blanks 1 and 1F and informed as to their purpose. Especially is it necessary for the questions as to any known inadequacies of service, and recommendations as to possible methods of supplying medical care, to be answered. The fundamental information desired in this survey is that which shows to what extent there is a lack of medical care for those in the indigent and low income groups. To be of any significance, this lack of care must be coincident with a desire for or effort to secure medical care. The medical man knows that the mere availability of medical care is not the answer to the problem. There are many instances in every physician's practice where those who are amply able to afford medical care go without proper prenatal care, allow their children to remain unprotected against diphtheria and smallpox, and in many ways do not take advantage of the opportunity for proper medical care which is available to them. The need and the desire for medical care are not always co-existent, and it is only in those cases where there is a need and a desire, but an inability to obtain

*Prepared by the Medical Economics Committee.

this medical attention, that the profession can be considered as failing to supply medical care.

The success or failure of the survey in Iowa depends on each practitioner of medicine. The county society secretaries, the central office, the councilors, and the members of the Medical Economics Committee are ready and willing to give all the assistance in their power to any county or individual who requests it. Any questions in connection with the survey will be promptly and gladly answered by the central office. Questions which cannot be answered will be referred to the Bureau of Medical Economics of the American Medical Association. The active cooperation of every member of the Iowa State Medical Society will make this survey a complete record of medical supply and medical needs in Iowa, and will be our contribution toward the success of the nationwide survey.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Council July 3, 1938

The Council of the Iowa State Medical Society met in the River Room of the Memorial Union in Iowa City at 10:30 a. m., Sunday, July 3. In attendance were L. L. Carr, F. P. Winkler, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, C. A. Boice, J. G. Macrae, M. C. Hennessy, E. M. MacEwen, R. L. Parker, and F. A. Hennessy. The meeting was called to order by the chairman and minutes of the three previous meetings were read and approved.

New business transacted: 1. Voted to have the secretary and some member of the Medical Economics Committee speak before the physicians in each councilor district, explaining the purpose and plan of the survey on medical care. 2. Referred a letter regarding the State Insane Hospitals to the Committee on Medical Education and Hospitals for investigation and recommendation. 3. Voted to decentralize the work of the Speakers Bureau by having each councilor appoint two or three physicians in his district to correlate the district's postgraduate work with the Speakers Bureau. 4. Appointed Earl Bush, chairman of the Speakers Bureau. 5. Announced appointment of E. D. Plass, F. P. McNamara, W. H. Gibbon, D. H. Kaump, and H. W. Morgan to the Executive Committee of the Cancer Committee.

Meeting adjourned at 12:30 p. m.

Meeting of the Cancer Committee July 3, 1938

The Cancer Committee met in the River Room of the Memorial Union at Iowa City at 2:00 p. m. Sunday, July 3. Those present included L. L. Carr, F. P. Winkler, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, C. A. Boice, J. G. Macrae, M. C. Hennessy, E. D. Plass, R. L. Parker, A. W. Erskine, and F. A. Hennessy.

Dr. McNamara gave a report on the cancer manual, saying there was a balance due the printer of \$740.65. It was voted to ask the Board of Trustees to pay this balance with State Society funds. A discussion of the campaign of the Women's Field Army followed. Meeting adjourned at 2:45 p. m.

Meeting of the Medical Economics Committee July 19, 1938

The Medical Economics Committee met at the Country Club in Boone, Iowa, Tuesday, July 19, at 4:00 p. m. Present were E. E. Shaw, A. C. Moerke, T. F. Thornton, R. L. Parker, and Mr. E. M. Kingery.

A letter from Dr. Peck, Superintendent of the State Sanatorium at Oakdale, referred to the committee by the Council, was read, and recommendations made regarding the issues raised in the letter. The survey on medical care was discussed.

Meeting adjourned at 5:00 p. m.

Meeting of the Fracture Committee July 24, 1938

The Fracture Committee of the Iowa State Medical Society met in the central office Sunday, July 24, at 1:00 p. m. Those present were D. C. Conzett, W. G. Bessmer, F. L. Knowles, K. R. Werndorff, W. E. Wolcott, and V. A. Ruth.

The meeting was called to order by the chairman and the following business was transacted: 1. Letter written to Board of Trustees asking for funds for Fracture Committee, and replies, were read and discussed. 2. The preparation of motion picture films dealing with the care of fractures was discussed. It was decided to meet in Fort Dodge on September 11, and review all of the fracture films already available; determine which are best suited to the Iowa program; make copies if possible of these films; and add to this library some films made by Iowa physicians. 3. Voted to accept Dr. Erskine's invitation to take charge of the program for the Friday morning session of the annual meeting, and drew up a tentative outline of subjects and speakers. 4. Decided to undertake a study of gas gangrene, utilizing the county fracture chairmen in the work. 5. The date for the statewide fracture meeting was set at October 20, at the Hotel Fort Des Moines, and the program for the meeting was outlined.

Meeting adjourned at 3:30 p. m.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 4:00 p. m.

WSUI—Mondays at 7:45 p. m.

- | | | |
|-----------|--|--------------------------|
| August 10 | Some Conceptions and Misconceptions of Insanity— | Leonard P. Ristine, M.D. |
| August 17 | Asthma— | John C. Schrader, M.D. |
| August 24 | Anemia— | Donald H. Kaump, M.D. |
| August 31 | Is Your Child Ready for School?— | Isaac Sternhill, M.D. |

A Doctor Contemplates the Care of the Sick*

GORDON F. HARKNESS, M.D., F.A.C.S., Davenport

The horse and buggy days of medicine have passed. No modern trained physician would ask for their return, yet the practice of medicine is more than the discovery and development of scientific facts; it is rather the art of applying these scientific truths in the care of the ill. It is this art which is difficult to explain to the lay mind so that it can comprehend, as only the physicians, the temperament, the patience, the vagaries, and the inconsistencies of the human mind when the body is ill.

Science and invention with our newer industrialism have changed the very woof of our social fabric. The science of medicine has played an important part and stands today as a significant factor in our economic structure. Modern medicine is but little more than half a century old, dwarfing in its achievements the preceding two thousand years. Is it any wonder that such advancements have brought disturbing social and economic changes in the application of its science? Modern medicine has increased the expectancy of life from under forty to over sixty years; not that we will have more centenarians, but we will have more old people. This means that economic readjustments are necessary. Modern medicine in its humanitarianism is defying nature's law of the survival of the fittest. We are preserving weaklings and those with mental and physical handicaps, permitting them to reach a procreative age. Our penal institutions and insane asylums have as the greatest intake factor those who have been brought into this world destined always to have a low level of intelligence, largely the result of propagation by the unfit. Modern husbandry weeds out the unfit and improves the breed. Not all, but many of our 900,000 feeble-minded imbeciles and idiots, our 100,000 blinded, our 1,000,000 with major speech defects and our 3,000,000 deafened children are an indictment of human propagation.¹

There are four essentials to the individual in his life, and they are adequate food, clothing, shelter and medical care when ill. This gives a prominent part in our economic life to scientific medicine and a position of responsibility to the medical profession. It must be borne in mind that the first three essentials have a most important part in the preservation of health. There is a

great difference in one's viewpoint whether one assumes that government should provide these essentials or whether government should attempt to provide the opportunity for the individual to be able to obtain them. Is the maintenance of the individual's health a function of government? The answer is both "yes" and "no." There was a time when the family physician was everything, individual advisor and self-appointed public health authority. Science has changed that and we have accepted as a part of governmental function, much that has to do with the preservation of the individual's health because this knowledge can best be applied through governmental agencies.

The physician must accept two axioms; first, the patient is not created for the doctor, but rather the physician has been created for the patient; and second, the future application of what medicine has to offer and the means by which it will be applied, will be determined not by the medical profession but by our citizens as a civic group. Therefore, it becomes the duty of the medical profession to champion changes which will be for the public good even though they entail individual sacrifice. The medical profession has done this in the past and will continue to do so in the future. Furthermore, it is equally the duty of the medical profession to resist changes and expose the fallacies in plans for the care of the ill when those plans will not eventually operate for the public good. The maintaining of high standards of medical education and the producing of physicians trained to apply what the science of medicine has to offer, make a third axiom. Acknowledging the limitations of the science of medicine and the shortcomings and inefficiencies of some members of the medical profession, the fact remains that as a group it has persistently worked to raise its own standards as a means of improving its service to the public.

In 1929 statistical information estimated that \$3,656,000,000 was spent for all forms of medical service, while \$5,888,000,000 was spent for tobacco, toilet articles and recreation, and \$9,475,000,000 for automobiles and other travel expense.² The medical expense represented \$30 per capita or four per cent of the national income. This medical dollar was divided approximately as follows: physicians, 29.8 per cent; hospitals, 23.4 per cent; dentists, 12.2 per cent; public health work 3.3 per cent; nurses 5.5 per cent; medicines 18.2 per cent; cultists 3.4 per cent; and miscel-

*Editor's Note: We offer this article to our membership in the belief that it contains some new thoughts on the much discussed subject of medical economics. The address in full was presented before the Contemporary Club in Davenport, May 9, 1938, and has been abstracted for use in the JOURNAL.

laneous 4.2 per cent.³ It does little good to decry the amounts spent upon unnecessary luxuries. Our people are going to follow their own desires in spending their incomes. Education, not legislation, slower and more evolutionary than revolutionary in nature, will eventually place proper spending on a more stable basis.

The great difficulty is not that medical costs are too high; \$30 per capita or four per cent of our income is not exorbitant. The real difficulty is that illness is unpredictable. The family in the lower income group may go for years with practically no expense and then swiftly and without warning they are faced with medical costs which mean financial disaster. Such would not be the case if budgeting had been followed and a certain sum had been set aside for the time when major illnesses confronted them. Budgeting for such long periods of time is not practical and for that reason many governments and many individuals have turned to insurance, which is simply a method of averaging variable costs. Those who have given little thought to the subject believe that one panacea may be found to solve all these perplexing problems. They little realize the geographical variations to be considered, with 45 per cent of our people in communities of 100,000 or more, seven per cent in those of 15,000 to 100,000, ten per cent in those from 2,500 to 15,000, and 38 per cent classified as rural.⁴ A system of medical care applicable to one group might not be applicable to another group. The variations also extend to the status of the individuals who are in the various groups. The ordinarily accepted grouping of the population into the indigent, that large low income class, and those fortunately endowed with more than the necessary financial resources, serves well for this discussion. This latter group can be dismissed since its personnel does not offer a civic or governmental problem. However, the care of the indigent group has become an acknowledged governmental responsibility. In this connection we believe adequate medical care assumes that the state also will provide adequate food, clothing and shelter since they are prerequisites to the maintenance of good health and essentials to recovery from illness.

Time does not permit a review of the various methods used during the past few years. From eight years' active participation in our local medical relief plan, I can only summarize what I believe to be some of the essentials as applied to this community, without in any way inferring their applicability to all communities. The farther you remove local responsibility and local payment for services rendered, the more red tape is

encountered with increased administrative expense. Medical service will always remain a personal service. The choice of physician by the recipient of governmental aid has some advantages to the extent that any one who is ill prefers to exercise his own choice as to his medical attendant. There is perhaps a certain confidence engendered even if his choice has not the best qualifications to treat the patient's particular ailment. However, for eight years this community operated on a system that did not permit the individual choice of physicians, and we found that this plan proved to be an economy of service to the taxpayers, not only in less compensation to physicians but also in charges for hospitalization. Since it was in the interests of economy that the lack of a choice of physician was instituted, we feel that the recipient of charity, paid for in taxes, should be willing to forego this privilege. The author believes that medical service for the indigents can best be obtained by a system which assures cooperation by the medical profession as an organized body. The most economical of such services will be one on a contract basis in which the recipient does not have the choice of physician. A flat contract for a given period affords a better opportunity for budgeting the year's work, although it would be possible to arrange some sliding scale of remuneration if governmental authorities would be willing to segregate the indigents into separate classes and base the remuneration according to the number in each class. A contract price gives a freer hand to those certifying as to the eligibility of candidates for medical service, and a chance to exercise more humanitarianism without any additional cost to the government. The medical profession simply accepts the extra burden. A system of payment according to an agreed fee schedule will be more remunerative to the medical profession individually, and because of that is favored by some physicians. However, it eliminates many of the most skillful in the profession who individually do not care for the work but willingly cooperate in a group endeavor. It gives no assurance of an improved medical service and does mean a material increase in costs to the community. Direction of medical activities from without the medical profession is a definite bar to wholehearted cooperation by the medical profession as a group.

Turning our attention to that large bulk of our population, the so-called low income group, we find that the problem is not the average cost of illness but rather the variation in costs in different years. The average cost is about \$99.99 per family or \$25.25 per capita.⁵ Hospital illnesses con-

stitute only ten per cent of the total, yet aggregate 50 per cent of the total costs. In other words major illnesses are the ones which cause financial disaster. Statistics show¹ that 75 per cent of the general practitioner's office calls, and 90 per cent of his home calls have to do with minor surgery, respiratory infections, obstetrics, minor general complaints, and venereal diseases. Less than ten per cent of his work has to do with diseases against which public health efforts are directed.

Insurance as a means of averaging the costs of medical care has been in existence in Germany since 1883. Since that time governmental sickness insurance has been adopted in many countries. Plans for voluntary governmental insurance have, in all countries except Denmark and Sweden, been the precursors of compulsory insurance. There are variations as to service and classification of those required to join the ranks of the insured. In Great Britain all those earning less than 250 pounds must enroll among the insured. In France the plan includes those earning less than 18,000 francs. Russia is the only country with complete state medicine. Portugal is the only country in which sickness insurance is compulsory for all, regardless of income. The service in Germany is complete, while in England it embraces only the general practitioner. In Sweden and France a part of the sickness charge is borne by the patient at the time the service is rendered. It is only natural that agitation should be made for trying some governmental plan of insurance in this country. If compulsory insurance actually guaranteed adequate medical service for all, there would be little argument against it. We have had it proposed in the so-called Epstein bill, which failed of passage, not because of lack of advocates in our administrative circles, but rather because the cost to the government at the present time would have been a possible unpopular burden. The literature upon the subject has become voluminous. The American Medical Association through its House of Delegates has opposed its introduction into this country. Again education enters as a most essential factor in the decision on this important question. Certainly the adoption of compulsory sickness insurance by a number of other countries does not necessarily mean that we should adopt such measures. It behooves us rather to study the various systems, ascertain their accomplishments, their defects and failures, and then survey our own country and impartially attempt to decide whether conditions here make it worthwhile to adopt some form of compulsory insurance. Even the opponents to the plan have not brought forth anything in place of insurance

to average the variable costs. The position of the American Medical Association has been not against insurance as a means of averaging variable costs, but rather against the high administrative costs under government insurance. In Germany there are 2,000 more administrators than there are physicians.⁶ It is contended that the money a man pays for insurance should be returned to him when he is ill, by some system with less administrative overhead. What this expense might be in this country, with our political system one can only conjecture.

Compulsory insurance is theoretically a commendable effort to force the man of small means to put aside enough to pay for his medical care. In none of the countries where it has been in existence, is there any concerted action to abolish it. The International Labor Organization at Geneva has pledged itself to promote compulsory governmental health insurance,⁷ although I know of no such national action having been made officially by labor in this country. Compulsory governmental insurance has in most countries followed any form of voluntary governmental insurance. As to the general health of the various nations one must of course consider the prerequisites to good health; adequate food, clothing and shelter. Perhaps we are more fortunate in this regard than other nations, but according to the 1933 statistical report of the League of Nations⁶ the following permits a comparison:

	All Deaths Per 100,000	Infant Deaths Per 1,000	Diphtheria Per 100,000	
			Deaths	Cases
United States	10.7	59	3.9	39
Germany	11.2	76	5.6	114
England and Wales....	12.3	63	6.3	117
Scotland .....	.....	81	7.2	180
France	15.8	75	.....	50
Irish Free State.....	13.6	65	12.9*	113
Poland	14.2	128	17.0*	52
Illinois	10.5	49	1.7	22

*1932 figures

Particularly indictable stands the record of preventive medicine in countries where compulsory health insurance has been in force. Diphtheria perhaps more than any other disease, would seem to be an illness for which a great deal could be accomplished in such countries; yet in Germany and Austria where insurance includes the families and in England and Wales where it does not, there occurred an actual increase in the number of cases. Canada and the United States, who have no such system of insurance, have shown the greatest strides. Our general health improvement has been greater than that in any but a few small countries with a homogeneous population. Compulsory insurance has in no country reduced the total costs. The costs have increased as the system has progressed. In Germany in 1883, the cost per insured, exclusive of minors, was \$2.11

per insured while in 1932 it was \$15.06, which included added dental care. In Germany 35,000,000 insured paid four times what 30,000,000 uninsured paid for their medical care.⁶

Morbidity and days lost from work have also invariably increased. In England in 1921, 14 per cent claimed benefits, while in 1927, 23 per cent applied, an increase of 60 to 100 per cent in six years,⁸ and even with this, between 50 and 60 per cent of the patients who presented themselves at the free clinics were among the insured group. This seems to constitute rather conclusive evidence of dissatisfaction with the services rendered through their insurance. The combination of cash benefits with medical care has been a large factor in bringing human avarice to the foreground. The days lost from work in this country, 6.5 days, have remained practically stationary for the past twenty-five years. In Germany it has trebled since compulsory insurance has been in force. In England also there has been a marked increase, with 12.5 days lost in 1934.⁹

Sickness is to so large an extent indefinable that actuarial statistics make measurements difficult, but undoubtedly the system tends to spend itself on minor ailments. A crowding of the doctor's time with inconsequential maladies gives little time for thorough examinations and diagnoses. This is an acknowledged weakness of the system and results in a lowering of the type of medical service. In addition to the increase in illness claimed, the duration of illness has increased under compulsory insurance. The physician finds himself not only under the pressure of the beneficiaries but also of politicians. To one who confesses a belief that government exists for its people and not the people for its government, I would call attention of those theorists who advocate plans for compulsory health insurance in this country, to the fact that governmental administrative expense absorbs about 50 per cent of the costs and that it lends itself to the development of a large political bureaucracy. It seems to the author that the disadvantages in this country far outweigh the advantages. Education is far more important. We must repeatedly stress the fact that any scheme which has associated cash benefits with payments for medical care, lends itself to malingering, prolongation of illness and a desire to get something for nothing.

Except in a few small communities where hospitals are staffed by a small group and where group practice is maintained, it is generally conceded that hospital insurance and medical care insurance should be separate and distinct. Hospital insurance has much to commend it. By February,

1936, in over sixty communities, group hospitalization insurance had over 300,000 subscribers. The annual cost per individual varies from \$5.00 to \$12.00, according to localities and the type of service rendered. The average contract guarantees twenty-one days of hospital care, with semi-private room, nursing service, meals, operating room service, and laboratory service. Some plans include x-ray pictures and anesthesia. In most associations an additional reduced fee will entitle dependents to reduced rates. A waiting period is usually required for maternity patients and certain specified operations, together with a shorter period for ordinary illnesses. Some require a health pledge, but where groups are accepted this is generally waived.

When it comes to service contracts for medical care, there are a goodly number in existence in this country which vary in the type and scope of service promised. Space does not permit a description of these various plans but we want to mention specifically one which the Medical Society of New York has endorsed in principle, because we feel it is one which may go far toward solving this vexing problem. It is a scheme to provide medical expense money, not medical service for major illnesses. Experiences from various established plans indicate that a premium of \$30.00 a year should care for the average family. This would mean one and one-half per cent of a family income of \$2,000. Such a contract would provide a maximum amount of money in any one year. The general idea is that groups, none smaller than 150 or none larger than 5,000, can organize as units for medical expense insurance. In organizing with a head and board of directors, it is planned that the majority of the board shall meet the approval of the local medical society and that the medical society in turn will cooperate as to the fairness of each medical expense. The members of the group are not to be reimbursed for minor ailments with attending small expense items. There are two reasons for this; first, the minor illness expenses can be met by the ordinary family in the low income group; and second, the eliminating of these small items of medical expense materially reduces administrative overhead. In the major illness expense the member engages his own physician; private practice remains intact. The member is guaranteed expense money up to a maximum amount in any one year. The state insurance department, if enabling acts to cover such type of insurance exist or are passed, would supply the actuarial information based on services to be rendered, and would supervise the financial expenditures. Premiums might vary not only as

to benefits covered, but also according to the financial status of the group and the professional fees generally charged members of the group as individuals. For instance, a \$10,000 income man would hardly be eligible in the \$1,500 group. The group, through its directors, would be in control, and the individual patient-physician relationship would not be disturbed. Limitations in the size of each group would provide a better opportunity to guard against offenses of the members; likewise, the physician if he did not give adequate care or was not reasonable in his charges, would be answerable to his medical group. Administrative expense could be kept at a minimum, there would be pride in service performed on the part of the group officers, there would be no political interference and no governmental red tape. The plan lends itself to adjustments in costs according to the economic status of the participating groups. The plan is in its infancy but one can see in its fulfillment perhaps an answer to the argument for this country to experiment with compulsory governmental health insurance, with its high administrative cost, its political bureaucracies, and a tendency to lower the type of medical service rendered.

CONCLUSIONS

1. Education, not legislation, as to the prevention and care of disease is of greatest importance.

2. High educational standards must be maintained for those who undertake professional care of the sick.

3. The indigent class must be separated from others in medical care. The problems are distinct and different in each group. The medical care of indigency is a governmental function. In this there should first be humanitarianism, but no medical pampering. It should not be so attractive as to stimulate deceit so that a patient may continue to receive its service. Local responsibility as to administration and expense lessens the overhead, making for a much more economic government. Group medical cooperation with responsibility for and authority to direct its service, will give a better, more efficient and more humanitarian service.

4. The problem of the low income group is that of paying for major illnesses. The unpredictable time of their occurrence eliminates budgeting as a solution; some form of insurance is the only means of averaging the costs. Governmental control has too high an administrative cost; lends itself to political influences; suffers from too great a proportionate effort on minor

ailments; has shown a marked inefficiency in preventive medicine; has an influence to lower rather than elevate the type of medical service rendered; and breeds paternalism into our social fabric. Medical care of the low income group is not primarily a governmental function.

5. Medical problems best handled through governmental agencies should receive every encouragement and cooperation from the medical profession. As new problems arise, the best way to administer them should be carefully studied.

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"THE DOCTOR" NOW IN A PERMANENT HOME

The \$150,000 sculpticolor reproduction of the Sir Luke Fildes masterpiece "The Doctor," first shown by the Petrolagar Laboratories at Chicago's Century of Progress Exposition in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry in that city.

Following the two World's Fairs, "The Doctor" exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen princi-



pal cities throughout the country. Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding, and the noted artist, Rudolph Ingerle, and a large corps of assistants, and took nearly a year to complete. In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*

3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

COMMITTEE APPOINTMENTS

Mrs. Dean W. Harman of Glenwood, president of the Woman's Auxiliary to the Iowa State Medical Society, has announced her committees for the year 1938-1939. Headed by the Advisory Committee of the Iowa State Medical Society, which includes Dr. C. B. Hickenlooper of Winterset, Dr. Walter Vander Wilt of Rock Rapids, Dr. W. L. Alcorn of Washington, and Dr. F. K. Burnett of Clarinda, the following committees will carry on the work of the Woman's Auxiliary for the coming year:

ORGANIZATION

Mrs. Channing G. Smith.....Granger
Mrs. P. W. Beckman.....Perry
Mrs. D. F. Ward.....Dubuque
Mrs. H. W. Morgan.....Mason City
Advisor, Mrs. E. A. Hanske, Bellevue

EDUCATIONAL

Mrs. S. E. Lincoln.....Des Moines
Mrs. R. G. Hinrichs.....Manson
Mrs. A. E. Merkel.....Ankeny
Mrs. F. M. Roberts.....Knoxville
Advisor, Mrs. Russell C. Doolittle, Des Moines

ESSAY CONTEST

Mrs. W. A. Seidler.....Jamaica
Mrs. C. L. Putnam.....Des Moines
Mrs. Daniel J. Glomset.....Des Moines
Mrs. Earl B. Bush.....Ames

PUBLIC RELATIONS

Mrs. Robert S. Moth.....Council Bluffs
Mrs. F. P. Winkler.....Sibley
Mrs. J. A. Downing.....Des Moines
Advisor, Mrs. R. A. Becker, Atlantic

LEGISLATIVE

Mrs. J. Charles Ryan.....Des Moines
Mrs. I. U. Parsons.....Malvern
Mrs. George T. McMahon.....Waukee

HYGEIA

Mrs. J. C. Rockafellow.....Des Moines
Mrs. M. O. Larson.....Alton
Mrs. W. J. Connell.....Dubuque
Mrs. C. B. Hickenlooper.....Winterset
Advisor, Mrs. F. W. Mulsow, Cedar Rapids

REVISIONS

Mrs. J. C. Donahue.....Centerville
Mrs. Ward A. DeYoung.....Glenwood
Mrs. Thomas A. Burcham.....Des Moines
Mrs. T. E. Davidson.....Mason City
Mrs. T. A. Moran.....Melrose

PRESS AND PUBLICITY

Mrs. Fred Moore.....Des Moines
Mrs. E. A. Moore.....Harlan
Mrs. E. D. Miller.....Wellman
Mrs. P. M. Jessup.....Muscatine

PRINTING

Mrs. C. A. Nelson.....Red Oak
Mrs. L. A. Coffin.....Farmington
Mrs. W. S. Reiley.....Red Oak

FINANCE

Mrs. M. C. Hennessy.....Council Bluffs
Mrs. W. R. Hornaday.....Des Moines
Mrs. S. E. Lincoln.....Des Moines
Mrs. C. A. Boice.....Washington
Mrs. F. P. Winkler.....Sibley

NOTE TO AUXILIARY SECRETARIES

The chairman of your Press and Publicity Committee is most anxious to receive regular monthly reports from the secretaries of the various county auxiliaries on their activities, meetings, items of interest, etc. News notes should be sent directly to Mrs. Moore, at 3407 Lincoln Place Drive, in Des Moines, by the twentieth of any month, in order to appear in the next month's issue of the JOURNAL.

BOOK LIST AVAILABLE

Once again members of the Woman's Auxiliary are indebted to the Polk County Auxiliary for its very complete list of books which are suitable for a book review section of programs, as well as for general reading by physicians' wives. The present list brings up to date that which was issued last year, and includes some excellent volumes, both fiction and non-fiction in type. Copies are being made for us in the central office and will be mailed to each member this month.

SOCIETY PROCEEDINGS

Dallas-Guthrie Society

Members of the Dallas-Guthrie Medical Society met in Woodward, Thursday, July 21, for the following program: The Fundamentals of Endocrinology, Lawrence D. Smith, M.D., of Des Moines, discussed by B. L. Knight, M.D., of Cedar Rapids, C. B. Luginbuhl, M.D., of Des Moines, and W. B. Armstrong, M.D., of Ames; The Treatment of Fibroids in Pregnancy, Ralph A. Reis, M.D., of Chicago, Illinois, president of the Central Association of Obstetricians and Gynecologists, discussed by J. J. Noonan, M.D., of Marshalltown, C. W. Seibert, M.D., of Waterloo, and N. M. Whitehill, M.D., of Boone.

Fayette County

The Fayette County Medical Society met jointly with the Clayton, Allamakee and Winneshiek County Medical Societies, at the West Union Country Club, Tuesday, July 12. Following the seven o'clock dinner, Major James Morrow, M.D., of Austin, Minnesota, delivered a splendid address on Military Medicine. During the business meeting, the state tuberculosis control program was discussed and accepted for Fayette county. The survey on medical care being undertaken by the American Medical Association was discussed and action was deferred until more explicit directions were available.

H. H. Wolf, M.D., Secretary.

Hardin County

Milo G. Meyer, M.D., of Marshalltown, was the speaker of the evening when the Hardin County Medical Society met in Eldora, Friday, July 29. Several Marshalltown physicians were present to hear Dr. Meyer speak on Psychoneurosis.

W. E. Marsh, M.D., Secretary.

Wayne County

Thursday, July 14, members of the Wayne County Medical Society met at the Merchant's Hotel in Allerton, for a business meeting and scientific program. Arthur E. Davis, M.D., of Seymour, addressed the group on Rheumatism.

PERSONAL MENTION

Dr. A. A. Rose, after practicing five years in Story City, has left that locality, and moved to Williams, where he will occupy the offices of the late Dr. Keating.

Dr. Thomas E. Kane, who has recently returned from a period of postgraduate study in Vienna, has located in Boone. Dr. Kane was graduated in 1936 from Creighton University School of Medicine, and

served internships at the Creighton Memorial St. Joseph's Hospital in Omaha, and St. Vincent's Hospital in Sioux City.

Dr. R. A. Stewart of Independence addressed the High Twelve Club of Cedar Rapids, Friday, July 15, on "Conditions at the Various State Hospitals." All service clubs in the city, and the Linn County Medical Society, were invited to the meeting.

Dr. Paul W. Osincup, who was graduated in 1937 from the State University of Iowa, College of Medicine, has returned from Chicago, where he completed his internship and will locate in Sioux City, becoming associated with Dr. Joe M. Krigsten.

Dr. A. L. Yocom has announced the association of Dr. R. S. Keller with him in the work at the Yocom Hospital in Chariton. Dr. Keller is a graduate of the University of Illinois, College of Medicine, and comes directly from Brooklyn, where he has been connected with the Kings County Hospital for the past two years.

Dr. Ralph L. Wicks has entered into partnership with Dr. C. B. Hickenlooper in Winterset. Dr. Wicks was graduated from Creighton University School of Medicine in 1937, and served his internship at Mercy Hospital in Des Moines.

Dr. B. I. Mueller, for the past three years associated with Dr. I. K. Sayre in St. Charles, has left that vicinity, and moved to La Harpe, Illinois.

Dr. Harry Frey, formerly of Holdenville, Oklahoma, has located in Fairfield, where he will continue the practice of his specialty, diseases of the eye, ear, nose and throat.

Dr. Donald Koser, 1937 graduate of the University of Nebraska, College of Medicine, has established himself in the former offices of Dr. C. H. Hall in Cherokee. Dr. Koser completed his internship at the Methodist Hospital in Des Moines.

Dr. Melvin T. Johnson, who for the past few years has practiced in Columbia, Utah, arrived in Iowa during the past month and will locate in Lake Mills. Dr. Johnson was graduated in 1928 from the State University of Iowa, College of Medicine.

Dr. Earl S. Burch, a former resident of Fort Dodge, has returned to that city to practice medicine.

He will be associated with Dr. E. F. Beeh. Dr. Burch was graduated in 1937 from the Washington University School of Medicine, St. Louis, Missouri.

Dr. John L. Klein, Jr., son of Dr. John L. Klein of Muscatine, has recently been associated for the practice of medicine with his father and Dr. George A. Sywassink. After his graduation from the State University of Iowa, College of Medicine, in 1934, young Dr. Klein became a member of the resident staff of the Montreal General Hospital, in Montreal, Canada, and he has been connected with that institution for the past four years.

Dr. Robert E. Shaw has entered the practice of medicine in Clarksville, where he will occupy the offices of Dr. D. L. Youngs, who has been in poor health for some time. Dr. Shaw was graduated in 1935 from the State University of Iowa, College of Medicine, and interned at the University Hospitals in Iowa City, and the Seattle General Hospital and the Children's Orthopedic Hospital in Seattle, Washington.

Dr. Lawrence G. Schaeferle has become associated with Dr. A. F. Walter for the practice of medicine in Gladbrook, according to a recent announcement by Dr. Walter. Dr. Schaeferle is a graduate of the State University of Iowa, College of Medicine, receiving his degree in 1936, and comes to Gladbrook from Galveston, Texas, where he has been connected with the United States Marine Hospital.

MARRIAGES

The marriage of Miss Pauline Davis of Estherville and Dr. Lewis E. Hedgecock of Hampton, took place Tuesday, July 12, in the First Presbyterian Church in Nowata, Oklahoma. Dr. Hedgecock was graduated in 1935 from the State University of Iowa, College of Medicine, and served his internship at the San Diego County General Hospital in San Diego, California, before locating for the practice of medicine in Hampton.

DEATH NOTICES

Sala, Ono Polk, of Davenport, aged sixty-five, died suddenly July 21, apparently suffering a heart attack while driving his car. He was graduated in 1897 from the Milwaukee Medical College, and at the time of his death was a member in good standing of the Scott County Medical Society.

Smith, Frank Winthrope, of Red Oak, aged sixty-eight, died July 6, after an illness of more than two years. The immediate cause of death was the result of heart complications. He was graduated in 1894 from the State University of Iowa, College of Medicine, and at the time of his death was a member in good standing of the Montgomery County Medical Society.

NURSES HAVE 1938 INTERPROFESSIONAL PROGRAM

The Iowa State Association of Registered Nurses will hold the Thirty-fifth Annual Convention in Waterloo, October 11, 12 and 13, 1938, with headquarters at the President Hotel. The afternoon of Wednesday, October 12, will be devoted to an interprofessional program, and this meeting will be open to the public, as well as members of the nursing, dental, veterinary, pharmacy and medical professions. Guests will also be invited to attend the annual banquet of the organization which will be held on the evening of October 12. The program is being given in accordance with the recently adopted policy of asking the five professions to devote one-half day every five years to a discussion of mutual problems and activities of an interprofessional nature. Officers of the Iowa State Association of Registered Nurses for 1938 are Mrs. Nellie Holmes, superintendent of St. Luke's Nursing School, Davenport, president; and Mrs. Margaret Stoddard Parker of Independence, secretary.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Third International Goiter Conference, American Association for the Study of Goiter, September 12 to 14, 1938, in Washington, D. C.

Seventeenth Annual Scientific and Clinical Session of the American Congress of Physical Therapy, held jointly with the Twenty-second Annual Convention of the American Occupational Therapy Association, September 12 to 15, 1938, at the Palmer House in Chicago.

American Association of Railway Surgeons, September 19 to 21, in Chicago. Dr. Daniel B. Moss, 547 West Jackson Boulevard, Chicago, Secretary.

American Roentgen Ray Society, September 20 to 23, in Atlantic City, New Jersey.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, September 22 to 24, in White Sulphur Springs, West Virginia. Dr. James R. Bloss, 418 Eleventh Street, Huntington, West Virginia, Secretary.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28 to 30, 1938, at the Hannibal-LeGrange College, Hannibal, Missouri.

Second National Assembly of the International College of Surgeons, October 13 and 14, 1938, at the Bellevue Stratford Hotel in Philadelphia, Pennsylvania.

Eleventh Annual Graduate Fortnight of the New York Academy of Medicine, October 24 to November 4, New York, N. Y. Subject for 1938 session—Diseases of the Blood and Blood-forming Organs.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. R. T. LENEGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

The Historical Committee Its Functions and Purposes

The Historical Committee of the Iowa State Medical Society was established for the purpose of collecting and correlating historical data in order to complete the medical history of Iowa, so admirably inaugurated by the late Dr. David S. Fairchild in the publication of the first volume in January, 1930. By publishing the histories of different counties, special medical societies, biographical data of individual physicians, and accounts of the historical development of medical schools, it has been possible to record more completely the sequence of medical historical events from the earliest settlement in Iowa to the present time. It has required special care to avoid a repetition of recorded events as well as to preserve the proper relationship in the various stages incident to medical progress in the various sections of the state.

The Committee desires to express its appreciation to the members of the Iowa State Medical Society who have been so helpful in bringing this historical record to its present state of completeness, and in addition hopes to enlist their continued interest in making this final appeal for the following information:

1. Any available record of special medical occurrences, press notices of professional services or personal anecdotes of pioneer doctors during the fifty years preceding 1880.

2. Copies of old medical journals published in Iowa after September, 1850, newspaper accounts of county, district or state medical society meetings, biographical and obituary notices of physicians during the period from 1850 to 1890.

Any expense attending the obtaining of this

information will be gladly assumed by the Committee.

STATE MEDICAL LIBRARY

Some Rare Finds

While the energetic medical librarian, Dr. Jeanette-Dean Throckmorton, was browsing about the attic of the State House on a recent July day, the following rare treasures came to light:

1. The Western Medico-Chirurgical Journal, edited by J. F. Sanford, M.D., and Samuel G. Armon, M.D., professors in the Iowa State University, Volume I, Keokuk, Iowa, August 1851, No. 12. This is the closing number of the first volume of the first medical journal published in Iowa, as well as the first publication of its kind west of the Mississippi river. The separate numbers of the first volume are very rare: there is only one copy of Volume I, Number 1, September 1850, now the prized possession of Dr. Frank M. Fuller of Keokuk.

2. The Western Medico-Chirurgical Journal, Volume II, Keokuk, Iowa, November, 1851, No. 3.

3. The Western Medico-Chirurgical Journal, edited by J. F. Sanford, M.D., professor of surgery in the Iowa State University, Volume II, Keokuk, Iowa, July, 1852, No. 4. Announcement is made in this number of an interruption in publishing the Journal from November 1851 to July 1852.

4. The Western Medico-Chirurgical Journal, Volume II, Keokuk, Iowa, November, 1852, No. 8.

5. The Western Medico-Chirurgical Journal,

Volume II, Keokuk, Iowa, January, 1852, No. 10.

6. The Western Medico-Chirurgical Journal, Volume II, Keokuk, Iowa, July, 1853, No. 11. There was, evidently, again a lapse in publication from January to July. Announcement is made that the Journal will be published bi-monthly, "instead of monthly as heretofore," the subscription rate being "two dollars per annum, in advance."

7. The Western Medico-Chirurgical Journal, Volume II, Keokuk, Iowa, September, 1853, No. 12. This number is the closing number of the second volume.

8. The Western Medico-Chirurgical Journal, Volume III, Keokuk, Iowa, March, 1854, No. 3. The announcement appears in this number of the fifth annual meeting of the Iowa State Medical and Chirurgical Society, to be held at Muscatine, Wednesday, June 14, 1854.

9. Iowa Medical Journal, Volume I, May, 1854, No. 10, conducted by the Faculty of the Medical Department of the Iowa University.

10. Iowa Medical Journal, Volume I, July, 1854, No. 12.

The last two numbers were part of the first volume of a rival publication of the Western Medico-Chirurgical Journal and soon superseded it. Dr. Sanford had previously resigned from the faculty of the Medical Department of the Iowa University. While these numbers of the early medical journals in Iowa are valuable additions to the Library, it is hoped that the files of both Journals may some day be completed.

Aside from those mentioned, the Medical Library possesses the following additional numbers of the Iowa Medical Journal: Volume IV, April and May, 1855, No. 4; Volume V, November and December, 1867, No. 1; Volume V, January and April, 1868, Nos. 2 and 3; and Volume V, January and February, 1869, No. 4. Any member of the Iowa State Medical Society having knowledge of any of the missing numbers is urged to communicate with the Medical Librarian.

In addition to the above the following two interesting pamphlets were discovered: Constitution, By-Laws and Code of Ethics of the Iowa State Medical Society, together with the Transactions of the Eighth and Ninth annual meetings held at Iowa City and Mount Pleasant, 1857-1858; Introductory Lecture, delivered by Dr. L. McGugin, Am. M.D., to the students of the Medical Department of the Iowa State University, Session 1860-1861, Keokuk, Iowa.

All of these "finds" have distinct historical value, and will add an interesting source of reference for further research connected with the pioneer period of Iowa medicine.

"GOOD MORNING, DOCTOR"*

This cheery greeting forms the title of the delightful life story of our beloved Dr. Bill Rohlf related by himself. It is told in that homely style and tinged with flashes of humor so characteristic of the author. It tells of the humble origin and early days in Davenport and Scott county, the sacrifices and struggles in obtaining an education, the beginning of medical study under the inspiration of the great leaders of that period. He pays a worthy tribute to the preceptor system and expresses the hope it may in some form again become a part of the present scheme of medical training.

Interesting incidents are related in connection with the beginning of a surgical practice during the horse and buggy stage and later that of the automobile when the lack of hospital facilities made it necessary to carry out most operations in the home, frequently on the kitchen table, often with the aid of the lamp, the flashlight, and best of all, the automobile headlight. The human stories are not unlike the experiences of many another practitioner at the turn of the century, yet Rohlf could always tell a story a little better than anyone else.

The Birthday Clinics form a prominent part of the story, and properly so, because these annual gatherings on January 5 during nearly twenty years, were expressive of the spirit of fellowship and the urge for medical advancement so distinctly the motive of his entire professional career. It was likewise characteristic of that harmonious and unique cooperative professional relationship existing in Bremer county, and particularly in Waverly. Through the medium of the Birthday Clinics this fine spirit was extended far beyond the confines of the local community.

The author makes only a modest reference to the many honors from professional colleagues, but dwells at length on the simple tribute from a grateful patient, the annual remembrance of a birthday cake, the dedication of the Boy Scouts of a boulder engraved, "To Beaver Bill Rohlf, a Friend of All Boys, 1937," and the satisfaction of helping young physicians during the training period and to a successful start in their professional careers. The book is dedicated to his wife, and many a gracious acknowledgment of her helpful influence is interwoven throughout this life story.

This little volume portrays a historical epoch in Iowa medicine, and is significant of the vision and the leadership of men like Rohlf who carried the torch of medical progress during the past fifty years.

W. L. B.

*Written by W. A. Rohlf, M.D., Waverly, Iowa, and published by The Torch Press, Cedar Rapids, Iowa.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE HEART IN PREGNANCY—By Julius Jensen, Ph.D., assistant professor of clinical medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.50.

A TEXTBOOK OF PATHOLOGY—By William Boyd, M.D., professor of pathology and bacteriology, University of Toronto. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

HEMORRHOIDS—By Marion C. Pruitt, M.D., associate in surgery, Emory University School of Medicine, Atlanta, Georgia. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.00.

SYMPTOMS OF VISCERAL DISEASE—By Francis Marion Pottinger, M.D., professor of clinical medicine, University of Southern California. Fifth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.00.

SYPHILIS, GONORRHEA AND THE PUBLIC HEALTH—By Nels A. Nelson, M.D., director, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health, and Gladys L. Crain, M.D. The Macmillan Company, New York, 1938. Price, \$3.00.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION—By Marion Douglass, M.D., assistant professor of gynecology, Western Reserve University; and Robert L. Faulkner, M.D., senior clinical instructor in gynecology, Western Reserve University. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.75.

THE NEW INTERNATIONAL CLINICS—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Volume II, First Series (old Forty-eighth). J. B. Lippincott Company, Philadelphia, New York and Montreal, 1938.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS—By H. O. McPheeters, M.D., attending physician, New Asbury, Fairview and Northwestern Hospitals, Minneapolis, Minnesota; and James K. Anderson, M.D., instructor in surgery, University of Minnesota School of Medicine. The F. A. Davis Company, Philadelphia, 1938. Price, \$4.50.

PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY—By Adam Edward Schlanser, M.D., colonel, Medical Corps, United States Army. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

MEDICAL STATE BOARD QUESTIONS AND ANSWERS—By R. Max Goepf, M.D., formerly professor of clinical medicine, Graduate School of Medicine, University of Pennsylvania. Seventh edition, revised. The W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.

ELECTROTHERAPY AND LIGHT THERAPY—By Richard Kovacs, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Third edition, revised. Lea and Febiger, Philadelphia, 1938. Price, \$7.50.

MATERIA MEDICA, DRUG ADMINISTRATION AND PRESCRIPTION WRITING—By Oscar W. Bethea, M.D., professor of clinical medicine, Tulane School of Medicine. Fifth edition, revised. F. A. Davis Company, Philadelphia, 1938. Price, \$5.00.

PEDIATRIC SURGERY—Edward C. Brenner, M.D., director of surgery, Riker's Island Hospital. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN—By John A. Hardy, M.D., El Paso, Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.

BOOK REVIEWS

WORKBOOK IN ELEMENTARY DIAGNOSIS FOR TEACHING CLINICAL HISTORY RECORDING AND PHYSICAL DIAGNOSIS

By Logan Clendening, M.D., professor of clinical medicine, University of Kansas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$1.50.

This volume consists of forms for history taking and a routine outline for physical examinations. Only the simple and important procedures are discussed. The descriptions are taken from the original publications. Many of the procedures in physical examination are illustrated, the illustrations also having been taken from old publications. This is a simple and elementary volume. E. E. K.

HEMORRHOIDS

By Marion C. Pruitt, M.D., associate in surgery, Emory University School of Medicine, Atlanta, Georgia. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.00.

The illustrations in this book are unusually clear in detail and the colored plates give the true picture as none which we have previously seen has been able to do. They deserve considerable comment. Discussion of the treatment of acute irreducible protruding internal hemorrhoids, methods of reduction attempts, surgery versus palliative treatment and fears of infection from local anesthetic injections or surgery are adequately discussed.

Those who still bear any antagonism toward the injection treatment of internal hemorrhoids because it was formerly in the hands of the quacks and non-medical men would do well to review the author's history of this interesting subject. In spite of the fact that this method has been adopted by the medical profession for only fifteen years or more, although it was first introduced in 1871, there are still those who condemn its success. The various solutions used and the special technic for each solution are fully explained and illustrated.

Operative technic is thoroughly described and illustrated. However, the discussion of postoperative care entirely omits the very important factor of the proper use of hot water either in the form of Sitz baths or packs. The author stresses the use of sedatives and one gets a false idea that rectal pain can be controlled by them successfully. C. H. J.

EAT AND KEEP FIT

By Jacob Buckstein, M.D., consulting physician, Central Islip Hospital. Emerson Books, Inc., 251 West 19th Street, New York, N. Y., 1938. Price, \$1.00.

The author of this book has given an interesting account of the various essential food elements, their sources in foods and the essential functions they perform in the body. His exposition is brief and clear and at the same time is easy to read. Particular advantages of certain food stuffs are pointed out as

well as their relations to the prevention and treatment of various diseases.

In the latter part of the book ideal diet requirements are described and special requirements for certain purposes are outlined. A number of the more common fallacies in the use of diet by quacks and food faddists are exposed. He outlines a diet to gain and one to lose weight, but points out that this should be done with the advice of a physician. Lastly, there are some convenient tables of the number of calories and the amount of certain food values in different foods.

All in all this book contains much useful and valuable information for the average reader. The author's style is inviting and the subject matter is discussed with remarkable clarity and thoroughness for a book of this size.

H. C. B.

CLINICAL ROENTGEN THERAPY

Edited by Ernst A. Pohle, M.D., professor of radiology, University of Wisconsin. Octavo, 819 pages, illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

Taken in collaboration with the author's recent companion volume "Theoretical Principles of Roentgen Therapy," this book forms a very complete and authentic library on roentgenotherapy. There are seventeen contributors, foreign as well as national, each a recognized authority in his special field, each with an enviable reputation for conservative and honest practice. Each writer gives the methods used by him, cites his results and compares them with other men. Every conceivable problem in roentgen therapy is discussed. There is an extensive bibliography. This book will be of great service to every roentgenologist.

H. W. D.

MEN PAST FORTY

By A. F. Niemoeller, A.B., M.A., B.S. With a foreword by Winfield Scott Pugh, B.S., M.D. Harvest House, New York, 1938. Price, \$2.00.

This interesting little volume is apparently written to catch the eye of the general public. The subject matter is presented in a simple, clear, understandable language, devoid of any technical features which complicate the problems associated with the male reproductive function.

One has the impression after reading this book that there is a tendency toward a physical breakdown of the male sexual apparatus after the forty-year mark has been passed. To a certain extent this undoubtedly is true, but the numerous and varied changes in the physical being (clinically) are not encountered at any specific age. Frequent complaints of functional impairment are registered be-

fore the age of thirty-five, a greater number at forty-five, and so on to the complete physical disability of old age.

The subject of maintaining body vigor is generally recognized as an alluring one. For this reason, cults of all kinds are preying upon those who feel the need of aid and advice. The medical profession should equip itself on all possible fundamentals to insure protection to the public. One method of doing this is to scrutinize all literature published for public consumption. The individual patient should receive this information only at the hands of the family physician.

W.R.H.

SYPHILIS, GONORRHEA AND THE PUBLIC HEALTH

By Nels A. Nelson, M.D., Director, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health, and Gladys L. Crain, R.N., Epidemiologist, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health. The Macmillan Company, New York, 1938. Price, \$3.00.

This volume of 341 pages goes directly into the various and complicated features forming the problem of the communicable social diseases. The authors have shown, in the compilation of the material as presented, the viewpoint of the able worker in the public health field, rather than that of the medical practitioner. The somewhat critical attitude displayed toward the private physician may be thereby explained.

It is reluctantly conceded that the major advances made in the detection, present day care, and future control of the genito-infectious diseases lie with the family physician as does, to a large extent, the success of the public health program.

The book is well written. There is a noticeable lack of brevity which makes the material difficult for the reader to digest. The volume is apparently intended for both the lay public and the attention of

W.R.H.

ESSENTIALS OF PRESCRIPTION WRITING

By Cary Eggleston, M.D., assistant professor of clinical medicine, Cornell University Medical College, New York. Sixth edition, revised. W. B. Saunders Company, 1938. Price, \$1.50.

This is the sixth edition of this classic text, revised to comply with the eleventh revision of the U. S. Pharmacopoeia and the sixth edition of the National Formulary. The text consists of a brief review of Latin grammar, a chapter devoted to the grammatic construction of the prescription, another on

weights and measures, a presentation of the practical writing of prescriptions, and chapters on dosage, vehicles and incompatibilities. This is a valuable volume, not only for the student but for the practicing physician to review, in order to assure correct prescriptions and the protection of his patient.

D.K.

THE DISEASES OF INFANTS AND CHILDREN

By J. P. Crozer Griffith, M.D., emeritus professor of pediatrics, University of Pennsylvania; and A. Graeme Mitchell, M.D., professor of pediatrics, College of Medicine, University of Cincinnati. Second edition, revised and reset; 1153 pages with 293 illustrations. W. B. Saunders Company, Philadelphia and London, 1937. Price, \$10.00.

This single volume pediatric textbook is one of the few excellent works of its kind in this field. Perhaps this is only to be expected when one considers the national and international eminence of the authors. One of the features which appeals to the reviewer is the extensive list of references at the end of each chapter. The reader is thus furnished with a ready source for obtaining more detailed information about any point desired.

The first ten chapters are devoted to such general subjects as anatomy and physiology in early life, infant feeding, symptomatology and diagnosis, and the like. There follows a section on diseases of the newborn and another on infectious diseases. General nutritional and metabolic diseases are discussed in the third section which includes a chapter on the acid-base balance of the body. The handling of this latter subject indicates the thorough up-to-date nature of the book. The following nine sections take up the diseases of the body by systems, such as the digestive system, respiratory system, etc., including a section on ductless glands and internal secretions.

This book should be especially suited to the needs of general practitioners, students and others who desire a quick source of reliable information for almost any problem which may arise in the field of pediatrics.

L. F. H.

NEW AND NONOFFICIAL REMEDIES, 1938

Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1938. Press of the American Medical Association, Chicago, 1938. Price, \$1.50.

In this book the Council on Pharmacy and Chemistry lists and describes the medicinal preparations which it has found acceptable for general use by the medical profession. New substances described in this volume are sulfanilamide and protamine zinc insulin, with the accepted brands. The proved value of these new additions to the physician's armamentarium bids

fair to make the past year a milestone in therapeutic progress.

Other noteworthy new drugs which appear in New and Nonofficial Remedies in 1938 are avertin with amylene hydrate, vinethene, pontocaine hydrochloride, basal, general and local anesthetics respectively; and novatropine and syntropan, synthetic mydriatics.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the "Bibliographical Index to Proprietary and Unofficial Articles Not Included in N. N. R." of much value. In this section (in the back of the book) are given references to published articles dealing with preparations which have not been accepted. These include references to the Reports of the Council, to Reports of the A. M. A. Chemical Laboratory and to articles which have appeared in THE JOURNAL.

SEX SATISFACTION AND HAPPY MARRIAGE

By Alfred Henry Tyrer, clergyman of the Protestant Episcopal Church; with a foreword by Robert L. Dickinson, M.D. Emerson Books, Inc., 251 West 19th Street, New York, 1938. Price, \$2.00.

This small volume is a contribution to the layman's literature dealing with the importance of the sexual element in achieving successful marriage. It is an inoffensive and reliable presentation of the facts which can safely be placed in the hands of the adult layman. It possesses no particular advantage over several other books which present the same subject.

D. K.

PEDIATRIC SURGERY

By Edward C. Brenner, M.D., associate professor of clinical surgery, New York Postgraduate Medical School, Columbia University. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

The fact that a child is not a miniature adult and that he requires special medical consideration has been emphasized for many years. The volume under discussion stresses this principle in surgery of children. Since the surgery of children embraces such a wide field, the author has wisely omitted orthopedic surgery. In addition to general surgery, however, he has included surgery of the head, face and mouth, and thoracic, urologic and neurologic surgery.

The subject matter is clear, concise and well organized. Pathology, symptomatology, diagnosis and treatment are taken up in complete and orderly fashion. The author expresses his own opinion in a manner which gives individuality to the text. His attitude toward the problems of child surgery may be said to be sound and conservative. Although the author has obviously attempted to give more space to those surgical conditions peculiar to children, a great deal of time is devoted to conditions rarely

seen in the child. The reader wishes unconsciously for a more exhaustive presentation of such conditions as intussusception, congenital hernia, etc. It would seem that such subjects as hemorrhoids might be entirely omitted.

The illustrations are for the most part new, and are excellent. The book as a whole is a valuable contribution to our systematized knowledge of pediatric surgery. It should prove of considerable value to any surgeon who undertakes to operate on children.

J. M. B.

THE HEART IN PREGNANCY

By Julius Jensen, Ph.D., assistant professor of clinical medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.50.

This book deals with the relation between cardiac disease and pregnancy. The author points out that for years we have accepted certain opinions on heart disease in pregnancy which have proved to be false. He has done a tremendous amount of work in compiling his own experiences and those of others.

The book is divided into three parts. The first part deals with the effect of pregnancy on the normal heart; the second, with abnormal cardiac impulse formation during the childbearing period; and the third, with organic heart disease and pregnancy.

This book should be of extreme interest to the general practitioner and obstetrician because it will help solve some of the problems which puzzle so many of use when a pregnancy is complicated by some cardiac disorder.

V. C. R.

THE NEW INTERNATIONAL CLINICS

Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Volume I, New Series. J. B. Lippincott Company, Philadelphia, 1938.

This volume is the first of the New International Clinics under the editorship of Dr. George Morris Piersol and an augmented editorial board. The familiar red cover has been replaced by dark blue. In spite of the change in the editorial staff and the external appearance of the volume the same caliber of material is found. The fact that this is the 189th volume of this instructive work speaks well for its position in modern medical literature.

This number of the Clinics consists of seventeen original contributions to various phases of medicine, eight clinics on several controversial medical and surgical subjects, and a review of recent contributions on the subject of biliary stasis and decompression. The reviewer is impressed with the merit of this work; he looks forward to the arrival of each volume and the opportunity it presents to keep abreast of progress in medicine.

D. K.

STATE DEPARTMENT OF HEALTH

(Continued from page 400)

more ticks were recovered. Several dozen ticks were removed from two dogs belonging to one of the neighbors.

Jackson County Case

Dr. Dwyer's case, a farm laborer, thirty-eight years of age, had worked on a farm near Green Island during the months preceding onset of symptoms which occurred July 7. The patient's illness resembled influenza with headache, fever, mild chills, severe aching, marked weakness, loss of appetite, loss of weight (fifteen pounds) and sore throat. He was seen for the first time on July 14, when the attending physician observed purplish blue macules, discrete in character and affecting the arms, trunk and legs. The petechial lesions persisted for over a week. There was no complaint of itching. A blood specimen, forwarded to the State Hygienic Laboratory on July 16, nine days after onset of symptoms, showed no agglutination in the Weil-Felix test. A second blood specimen, forwarded July 20, agglutinated two strains of the proteus antigen in a dilution of 1-320. The patient's illness was moderately severe, but he was up and around on July 23, when a field investigation was made by the State Department of Health representative, in cooperation with Dr. Dwyer. The farm on which the patient had worked, is in a hilly, heavily wooded area overlooking the Mississippi river. Although stating that he had found ticks on his body earlier in the summer, the patient gave no history of tick bite immediately preceding his illness. Some engorged and unengorged ticks were removed from a dog on the farm where the patient is employed.

These two cases represent the third and fourth respectively, of Rocky Mountain spotted fever cases, reported to the State Department of Health thus far in 1938.

PREVALENCE OF DISEASE

	May '38	June '38	June '37	Most Cases From	Cases Reported
Diphtheria	11	5	9	Clay	
Scarlet Fever	435	180	358	Polk, Black Hawk	
Typhoid Fever	10	3	13	Scott	
Smallpox	121	114	108	Washington, Polk, Lee	
Measles	1300	1036	43	Woodbury, Polk, Montgomery	
Whooping Cough	154	102	124	Woodbury, Linn	
Cerebrospinal Meningitis	1	3	1	Carroll, Scott, Winneshiek	
Chickenpox	284	173	135	Woodbury, Webster	
Mumps	129	92	36	Poweshiek, Woodbury	
Influenza	8	2	3	CCC Camps	
Poliomyelitis	3	1	0	Page	
Tuberculosis (Pulmonary)	94	53	77	(For State)	
Undulant Fever	6	12	14	(For State)	
Gonorrhea	159	197	220	(For State)	
Syphilis	258	276	306	(For State)	

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, SEPTEMBER, 1938

No. 9

URINARY ANTISEPSIS*

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Time will not permit a detailed discussion of the multitude of urinary antiseptics in use at the present time. Many of them offer definite symptomatic relief with little or no bacteriostatic or bactericidal action. Others have been shown to be highly efficacious in destroying bacteria in the urinary tract and have come into wide use in the past few years. Mandelic acid and sulfanilamide by mouth and neoarsphenamine intravenously have proved to be the most satisfactory agents in our hands in treating infections of the urinary tract. This paper will be devoted to a discussion of the use of these drugs in the treatment of such infections.

Preliminary to any discussion of urinary antiseptics, it seems wise to call attention once again to the importance of the visual examination of the urine before beginning treatment. Macroscopic and microscopic studies of the urine will frequently give important information to the physician in helping him to make a diagnosis satisfactorily and to administer appropriate treatment in the individual case. Extensive laboratory procedures are not involved and the following résumé of procedure is presented to illustrate this point. The male patient is instructed to void into two glasses after thoroughly cleansing of the glans penis; the first glass contains the washings from the urethra and the second glass contains the urine representative of that contained in the bladder. Macroscopic examination of the urine is then carried out under a good light, and it is noted whether or not the urine is clear, hazy, cloudy, bloody or contains shreds. The idea that grossly clear urine is free of pus or organisms is a fallacy. A pyuria consisting of thirty to forty pus

cells per high power field is not enough to make urine even slightly hazy and unless all clear urines are centrifuged and the sediment is examined under the microscope, many infections of the urinary tract will remain unrecognized. The information obtained by examining macroscopically the urine contained in these two glasses is best summarized in the accompanying table compiled by Pelouze.

The specimen of urine is collected from the female patient by means of a sterile catheter after the external meatus, labia and surrounding parts have been thoroughly cleansed. This specimen is then examined macroscopically, as was the second glass of urine obtained from the male patient, and the same gross characteristics are noted. The gross and microscopic appearance of urine obtained from the female by voiding may differ strikingly from that obtained by catheterization. Vaginal and cervical secretions may contaminate the urine and may entirely obscure the true picture. Unless the sedimentary findings on a voided specimen from a female are entirely negative, microscopic urinalysis is of no value whatever.

From this point on, the procedure of examination of the second glass of urine obtained from the male is the same as that followed in examining the urine obtained from the female by catheterization. A sample of either urine is centrifuged and the sediment recovered. A drop of it is placed on a clean glass slide, is covered by an ordinary thin cover slip and is examined under the high dry power of the microscope. The presence of erythrocytes, leukocytes, crystalline elements, spermatozoa, epithelial debris, mucous shreds or bacteria is easily noted. The number of blood cells per high power field should be noted. After this examination has been completed, the cover slip is removed and the remaining secretion evenly spread over the entire slide. The slide is then dried, fixed and stained by means of the Gram stain, the latter being the most satisfactory for identifying the general type of organism present.

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

SUMMARY OF THE TWO-GLASS TEST

First glass	Second glass	Impression
Cloudy	Clear	(a) Acute anterior urethritis (b) Acute anterior urethritis with mild or subsiding posterior involvement
Hazy	Clear	(a) Mild acute or subacute urethritis (b) Mild acute or subacute anterior urethritis with mild posterior involvement
Shreds	Clear	(a) Subsiding anterior urethritis (b) Subsiding anteroposterior urethritis (c) Chronic urethritis, generally as the result of deeper foci of infection in the prostate gland or other associated small channels
Cloudy	Cloudy	(a) Acute anteroposterior urethritis (b) Cystitis or suppuration in upper part of urinary tract
Cloudy	Hazy	(a) Subacute or mild anteroposterior urethritis
Hazy	Hazy	(a) Subacute or mild anteroposterior urethritis (b) Bacteriuria
Clear	Cloudy	(a) Seminal fluid (b) Contents of pus pocket (c) Sedimented mucus, or phosphates from a poorly emptying bladder (d) Slight terminal bleeding

The results of this examination will indicate whether the infecting organism is a bacillus or a coccus and whether it is a gram-positive or a gram-negative organism. For actual identification of the organism a complete bacteriologic study is necessary and, in this, cultural methods are used.

MANDELIC ACID

Mandelic acid is an aromatic hydroxy acid, discovered by Schatten in 1884. Rosenheim first suggested its use in treating infections of the urinary tract. This drug, although similar to the bactericidal agent of the ketogenic diet, namely, beta-hydroxybutyric acid, differs from it in that, when given by mouth, it is excreted unchanged in the urine and may be recovered in almost quantitative amounts. At present, mandelic acid is available on the market in many forms; the ammonium salt is used most frequently in the liquid preparations and the calcium salt, in pill form. The dosage for the adult is ten to twelve grams of the acid equivalent given daily for a period of six to twelve days. If the urine does not become sterile in this time, we believe administration of the drug should be discontinued for two reasons; first, the organism seems to build up a tolerance to the drug; and second, prolonged dosage may produce renal irritation resulting in a reduction of renal function, particularly in those cases in which renal function already is impaired.

Consideration of two essential points is necessary if mandelic acid is to be successful in eradicating infections of the urinary tract. Helmholz and Osterberg have shown definitely that the con-

centration of mandelic acid in the urine must be 0.5 per cent or greater and the pH must be 5.5 or lower. In order to satisfy the first point, fluids are limited to 1200 cubic centimeters or less daily from the start, except in the acute cases in which it is desirable to force fluids for the first few days. The desired pH will be obtained in a large percentage of cases. However, in some cases, it will be necessary to give ammonium nitrate or ammonium chloride in a dosage of four to six grams daily as a supplement to the mandelic acid. In other cases, hydrochloric or nitrohydrochloric acid will aid in lowering the pH and, in a few cases, the ketogenic diet will be necessary. In spite of these adjuncts there still remains a small group of patients among whom it is impossible, at the time, to lower the pH of the urine sufficiently to render the urine bactericidal or bacteriostatic. Mandelic acid is most efficacious in treating infections of the urinary tract produced by gram-negative bacilli or the *Streptococcus faecalis*. Rarely is it of any use in treatment of infections caused by the other cocci. In simple, uncomplicated bacilluria its efficacy is well known. In our hands this drug has eradicated such infections in more than 90 per cent of the cases. When the bacilluria is associated with chronic prostatitis, the results are not nearly as good and the organism is seldom eradicated until the prostatitis is much improved.

If the infection of the urinary tract has progressed to such a degree that pathologic deformity can be demonstrated, such as cicatrization of the renal pelvis and calices or dilatation of the pelvis, calices and ureter, again the results are not as

satisfactory as in the uncomplicated group. Tumor, stone, foreign body or obstruction anywhere in the urinary tract usually will prohibit the complete sterilization of the urine.

We have found mandelic acid to be non-toxic among almost all patients who have normal renal function. It is true that many of them complain of nausea, but this can be reduced to a minimum if the drug is given after meals and if a reduced dosage is used for the first twenty-four hours. Gastric upsets are further reduced by administration of the new preparation of calcium mandelate. Diarrhea, ringing in the ears and disturbances of vision rarely are encountered. Signs of renal irritation, such as microscopic hematuria, rarely occur and in only three cases have we seen gross hematuria following the ingestion of mandelic acid. Both forms of hematuria have ceased immediately on discontinuance of the treatment and usually do not recur when administration of the drug is resumed. Mandelic acid must be given with the greatest care to patients who have any impairment of renal function. In such cases the drug will not be tolerated and its use is distinctly limited in this group.

SULFANILAMIDE

Sulfanilamide has become an effective part of every physician's armamentarium within a very short space of time. The urologist and the general practitioner have used it extensively in treating infections of the urinary tract, with various results, because of ignorance regarding its proper dosage, its toxicity and the type of cases in which it is most efficacious. The drug is used most frequently in tablet form, each tablet containing 5 or 7.5 grains (0.3 or 0.487 gram). During the early use of this drug we gave much larger doses than we do now. At present we believe it is rarely necessary to give more than 60 grains (3.9 grams) daily, and sterilization of the urine usually can be obtained by a dosage of 40 grains (2.6 grams) daily for six to ten days. The drug is best given after meals and in some cases is better tolerated if each dose is supplemented with 10 grains (0.65 gram) of sodium bicarbonate. If patients are too ill to take the drug by mouth, it may be given subcutaneously. A purified powder of sulfanilamide is used to prepare an 0.8 per cent solution in physiologic saline. This may be given by hypodermoclysis with no distress to the patient either at the time of the injection or after.

Practically the same limitations attend the use of sulfanilamide as attend the use of mandelic acid. The infections of the urinary tract caused by bacilli respond much better than the infections

caused by coccal organisms. The *Staphylococcus* and the *Streptococcus faecalis* are rarely, if ever, influenced by the administration of sulfanilamide. However, there are two groups of cases in which administration of sulfanilamide is more efficacious than that of mandelic acid. The first group is composed of cases of prostatitis in conjunction with bacilluria. When the ketogenic diet and mandelic acid were employed in treatment, this group of patients always presented a difficult therapeutic problem, but the results obtained with sulfanilamide have been much better, no doubt because of the fact that the action of sulfanilamide is more general throughout the tissues of the body and it is excreted in the prostatic secretion. The second group in which this drug is superior is composed of cases in which infection of the urinary tract is caused by organisms of the genus *Proteus*. In cases of this type the problem of maintaining an adequate degree of acidity has been great and, frequently, all therapeutic efforts have failed because of our inability to lower the pH to 5.5 or less when using the ketogenic diet or mandelic acid. Such a degree of acidity is not necessary when sulfanilamide is used. Helmholz and Osterberg have shown experimentally that the action of this drug is enhanced when the pH is between 7.0 and 7.5. Our results in the cases of this group have been more striking since using sulfanilamide than with any other form of medication. The simple, uncomplicated bacillurias respond very well to treatment with this drug, but as soon as we deal with those cases in which there is cicatricial deformity, obstruction, stone, tumor, or foreign body, our results are not nearly so good as in the uncomplicated group of cases.

This drug has already proved itself to be of inestimable value in the treatment of gonorrheal infections. There are many conflicting reports in the literature regarding its efficacy in the treatment of this disease, but in many carefully controlled series, good results have been reported in 90 per cent of cases. Our routine has been to give 75 grains (4.88 grams) daily for two days, then 60 grains (3.9 grams) daily for two days, and then 40 grains (2.6 grams) daily for eight to ten days. Of late, we have started with 60 grains daily and continued with 40 grains daily after the first two or three days. Local treatment may or may not be instituted at the same time. However, we have insisted that the patient who has gonorrhea abstain from alcohol in any form and from sexual excitement during the course of sulfanilamide therapy. These two points are as important in present-day therapy as they have been in the past, and unless the behavior of the

individual is in accordance with these principles, good results cannot be expected. After the first course of treatment, if there has been very definite improvement, and if a clinical cure has apparently occurred, the patient is instructed to discontinue medication for seven to ten days, at which time a second course of the drug is given. If improvement during the first course of treatment has been only slight, we advise local treatment followed by administration of the drug after a lapse of seven to ten days. In a few cases it has been necessary to resort to three courses of treatment with the drug. Patients have not been dismissed as cured until three negative cultures have been obtained over a period of three weeks. All women are reexamined following two menses after the cultures have become negative. A very small percentage of cases still remains in which this drug will not eradicate the infection, and in such cases fever therapy is of great value, usually in conjunction with further sulfanilamide therapy.

Sulfanilamide is more toxic than mandelic acid. Approximately ten per cent of the patients who have infections of the urinary tract among whom we have attempted the use of sulfanilamide have had such reactions that it seemed wise to discontinue the administration of the drug. Elderly patients do not tolerate this drug as well as the younger patients and its use must be attended with care when given to patients more than fifty years of age. Headache and nausea are the most frequent toxic signs encountered among patients receiving sulfanilamide. These alone do not necessitate discontinuance of the medication, but when they occur the patient should be observed carefully in order to guard against the more severe degrees of intoxication induced by the drug. If cyanosis develops, we believe administration of the drug should be discontinued, unless the cyanosis is of a very mild degree. This sign may be the precursor of one of a number of different blood dyscrasias which might prove serious. Leukopenia progressing to agranulocytosis has been reported. Methemoglobinemia and sulfhemoglobinemia are seen occasionally and a number of cases of acute hemolytic anemia also have been reported. Cutaneous reactions are of two types; a reaction confined entirely to the exposed surfaces, and a generalized dermatitis of the toxic type. Dermatologists tell us that the latter is a definite contraindication to further use of the drug and that the former condition calls for discontinuing the drug, although it may be resumed later after the cutaneous lesion has disappeared, the patient being instructed to keep out of direct sunlight. General symptoms, such as malaise,

lassitude, weakness and vague aches and pains are frequently encountered and we have believed them to be due in part to the mild acidosis which frequently develops after the administration of sulfanilamide. Supplementing each dose of the drug with grains (0.65 gram) of sodium bicarbonate frequently will offset such unpleasant symptoms.

NEOARSPHENAMINE

For many years neoarsphenamine has been used sporadically by physicians in treating certain infections of the urinary tract. Varied results have been reported. The drug is given intravenously and the dosage and number of injections vary with different observers. Buchtel and the writer have observed that the most efficient and best tolerated scheme of dosage is 0.2 gram followed in five days by 0.3 gram. Rarely does a third dose bring about much improvement if there has been no change after the first two doses. The mode of action of this drug is not definitely known but work being done at the present time seems to indicate that the presence of arsenic in the urine, although in very small amounts, does exert a bacteriostatic effect which is greater if the acidity of the medium is increased. Buchtel already has called attention to this fact which we observed clinically. This form of therapy is used in combating infections of the urinary tract caused by coccal organisms. Again we find that the uncomplicated infections respond better than those associated with stone, tumor, deformity or obstruction. Frequently, coccal infections are associated with other foci of infection and we believe that these should be investigated thoroughly. Any infection existing outside the urinary tract should be removed before neoarsphenamine is given, if satisfactory results are to be obtained. The *Streptococcus faecalis* may be resistant to this form of therapy and usually responds better to mandelic acid and acidification of the urine.

SUMMARY

The treatment of infections of the urinary tract has been placed on a very scientific basis in the past five years. Many writers have reminded us of the value of a simple Gram's stain of the urinary sediment in planning our special treatment. Such methods are at the command of all physicians and should be of great aid in the satisfactory management of such diseases. Let me caution the general practitioner regarding one very important point. If the patient does not respond promptly to two courses of what seems to be the indicated form of therapy, the physician should

advise and insist on a thorough and complete urologic investigation to determine whether or not there is any coexisting pathology which is preventing eradication of the infection. Unless the general practitioner will do this, it will be necessary for many patients with lesions which can be treated conservatively to submit to more radical procedures as a result of unnecessary delay.

CONCLUSIONS

1. The visual examination of the urine, both macroscopic and microscopic, is the greatest single aid in the diagnosis and treatment of infections of the urinary tract.

2. Mandelic acid is the drug of choice in treating the majority of the bacillary infections and also those caused by the *Streptococcus faecalis*.

3. Sulfanilamide is also of value in treatment of infections caused by bacilli and by some cocci. Caution must be exercised in its use and the drug never should be given unless under the direction of the physician.

4. Neoarsphenamine is useful in treating infections of the urinary tract caused by cocci.

5. All foci of infection in the patient should be carefully investigated and eradicated wherever possible, particularly when the coccus is the invading organism in the urinary tract. This is frequently true when organisms cannot be demonstrated by the usual staining and cultural methods.

6. If the patient who has an infection of the urinary tract is not cured in a reasonable period by the above treatment, the physician should insist on a complete urologic investigation to rule out any coexisting pathology.

accumulation of clinical facts and observations. Typical syndromes grow fewer as experience and knowledge are gained concerning pathologic processes. Not only can similar pathologic processes evolve dissimilar clinical findings, but conversely, similar clinical pictures can be caused by different pathologic processes. This is no less true in neurosurgical diagnosis. It is notoriously true that cord, and particularly brain tumors are often either not localizable at all or they present symptoms and signs which lead to a false localization. This may be distressing but quite understandable when one considers the rich and interrelated function of various parts of the nervous system. In the present era of growing surgical application to the nervous system, it would seem that an important earmark of wisdom is the recognition of the limitations of clinical diagnosis and the agreement, when these limitations are reached, to use mechanical methods of diagnosis to the best ultimate interests of the patient.

In reference to cord tumors, diagnostic judgment would undoubtedly be further seasoned by merely entertaining the thought that certain obscure, painful afflictions such as sciatica might be due in the given case to an intraspinal tumor. When one considers that perineurial fibroblastoma is the second most common tumor of the spinal canal,* one is not surprised that pain is the first symptom in the vast majority of tumor cases. Pain was the first symptom in 82 per cent of thirty-nine extramedullary tumors reported by Tamaki.¹⁵ In this series pain alone preceded other symptoms (paresthesia and motor weakness) by an average of ten months.

It seems evident therefore, that for this type of tumor particularly, pain as an early symptom is due to irritation of the nerve root from which the tumor arises and the pain would be expected to be of root distribution. If the patient is seen in this stage where pain is unaccompanied by objective neurologic findings, the diagnosis stands a good chance of being erroneously made. To quote from Tamaki: "Obviously, at first, root pains are unilateral, and often, though not always, referred to the terminal peripheral distribution, as for example, to some point on the abdomen or anterior aspect of the thorax. With cervical tumors the pain may be felt in the back of the neck, in the side of the neck, in the shoulder or in the upper extremity; in thoracic tumors it is referred to the back, under the scapula, between the shoulders, in the region of the kidney, in the sternum, in the precordium, under the costal margin or in the abdomen. In a tumor at the

TUMORS OF THE SPINAL CORD*†

SOME CLINICAL CONSIDERATIONS RECOVERABILITY OF CORD FUNCTION

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Some very excellent monographs have been written which deal largely with the diagnosis, localization, surgery, and pathology of tumors in and about the spinal cord.^{1 to 13} The writers wish to emphasize and illustrate two features; first, the degree to which a spinal tumor may simulate other syndromes and hence be misleading in the diagnosis; and second, the recoverability of spinal cord function after the removal of benign tumors.

The perfection of skill in clinical diagnosis is acquired slowly. It grows with a never ending

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†Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

*Elsberg¹⁴ in a series of 191 cases reported 54 meningeal fibroblastomas (51 extramedullary and three extradural); and 36 perineurial fibroblastomas (30 extramedullary and six extradural).

ninth thoracic segment, pain was referred to the right costal margin; a diagnosis of cholelithiasis had been made and the patient subjected to an abdominal operation before she was admitted to this clinic. Similarly, in Beckman's¹⁶ case, the pain was referred to the region of the gallbladder.

"In tumors involving the lumbar segments pain was referred to the lower back, the lower abdomen or lower extremity. In one case there was colicky pain in the bowel. In caudal tumors pain was often felt in the lower back, especially in the small of the back, and from this point radiated to the leg. In some cases pain was unilateral in the beginning, later becoming bilateral."

Tamaki states further that the early onset of pain and its long duration has been responsible for a mistaken diagnosis in an estimated ten per cent of any series. The pain has been attributed to disease of the gallbladder, stomach, duodenum, appendix or pelvic structures. Neuritis, arthritis, and tuberculous spondylitis are among other diseases for which the patient may have been treated. Adson¹⁷ in a report of 279 intraspinal tumors stated that ten per cent of patients presenting root pain had been operated upon either previous to or following their admission to The Mayo Clinic, for some thoracic or abdominal lesion other than that of tumor of the spinal cord. Craig¹⁸ in a report of 312 cases of proved spinal cord tumors states that ten per cent of the patients had been operated upon as a result of mistaken diagnosis. Dandy¹⁹ calls attention to the long duration of pain as an initial symptom in the benign perineurial type of tumor and suggests that it might be a useful prognostic sign. In none of his intramedullary tumors did he encounter pain of such character.

All benign tumors, however, do not cause pain. This was strikingly true of extradural cysts reported by Elsberg.²⁰ Dandy's statement might be enlarged upon by saying that pain as an initial symptom of long duration is favorable toward a benign tumor and a good prognosis, but minimum pain or even the absence of pain does not necessarily mean the reverse. In Dandy's series the distribution of pain was: kidney region, three cases; lower ribs, one; down arm, two; in axilla, one; shoulder blade, two; and left groin, one. One patient was subjected to a nephrotomy operation for a presumed kidney stone because of sharp attacks of pain in this region. Dandy states that three kinds of pain result from spinal cord tumors; first, localized pain from direct involvement of the sensory nerves by the tumor; second, pain from pressure on the sensory tracts in

the cord,* and third, aching from intraspinal pressure.

Due to the very nature of the symptoms of an early intraspinal tumor in the pain cycle, the patient will frequently come under the care of an orthopedist. No doubt in any large hospital the neurologist and neurosurgeon find their most puzzling and difficult problems in differential diagnosis on the orthopedic wards. This is certainly true with reference to the spine. The neurosurgeon will profit greatly by learning some of the principles employed by the orthopedist and both should work in close cooperation. In a recent paper Steindler and Luck²¹ show by using the procaine hydrochloride test, that both local pain and radiation are in causal connection, and that radiation may be elicited by an area of local pain as a reflex symptom without being caused by root compression. Obviously root distribution of pain will not be limited to an area of skin but may falsely suggest ligament and joint pain and any knowledge concerning the innervation of these structures, as well as tests for their integrity, is valuable.

Of course, when a spinal tumor grows larger, other symptoms and signs make their appearance, and quickly betray the true cause of the pain. Frazier, quoted by Adson,¹⁷ attributed three cycles to the symptomatology of spinal tumors arising from nerve roots, blood vessels, and meninges; first, root cycle with pain manifestations; second, partial compression of the cord with Brown-Sequard syndrome; and third, complete compression of the cord with loss of all motor and sensory function below the level of the lesion.

In the last analysis, any study should prove profitable, and from a practical standpoint, the question arises as to whether the ten per cent of mistaken diagnoses can be reduced. Is it reasonable to suppose that by recognition and dissemination of facts, this group of patients in the *pain cycle* of a spinal tumor may be ferreted out and diagnoses properly made? Dandy¹⁹ states, "Whether one will eventually be justified in making a diagnosis of a spinal nerve or spinal cord tumor solely on the history of such a constant pain, is doubtful. As yet I know of no cases which have been operated from such a diagnosis." The early diagnosis of such a cord tumor would

*If pressure upon or involvement of the spinothalamic tracts is productive of pain, it is difficult to understand why intramedullary tumors are so minimally characterized by it. The same may be said of syringomyelia, particularly at the time when the pain fibers are being destroyed. In the writers' experience, thalamic tract section is invariably followed by girdle pain of several days duration, limited to a narrow segment corresponding to the level of the lesion, but never has pain been referred to a more extensive distribution of the pain tract. The girdle pain is minimal or absent when sensory roots have been spared or uninjured in performing the section.

be a triumph on three counts; first, removal of a tumor would spare the patient months of agonizing pain; second, significant cord damage would be forestalled; and third, the patient would be spared the possibility of a futile and misdirected major operation.

When one realizes how seldom a spinal puncture will fail to arouse or to verify a suspicion of cord tumor, then the failure to diagnose these cases must be attributed partly to insufficient examination. Lumbar puncture, though a simple procedure, is not commonly used in general practice. A capillary manometer, though a suitable one can be made in five minutes, is extremely rarely used, and the performance of the Queckenstëdt test is almost unheard of. One of the most valuable services the neurosurgeon can render to the student is the ordinary use of the ophthalmoscope and the proper performance of a lumbar puncture. The incorporation of these special but simple procedures should be mandatory in the armamentarium of the general practitioner. The writers would set down the following rules in the performance of a lumbar puncture, and if these rules are observed, it is felt that any harm which may result from the procedure will, when compared to the treasured information it can provide, be utterly negligible.

1. The puncture should be made in the second or third lumbar interspace with the patient lying on his side parallel to the floor.

2. Fluid should not be allowed to run freely, but slowly, drop by drop. One or two cubic centimeters will be sufficient for a cell count and globulin test. If the fluid is abundant, eight cubic centimeters will be sufficient for Wassermann and total protein tests.

3. If the pressure is tested, the manometer can be attached without a great loss of fluid and the capacity of a capillary manometer will not be over two cubic centimeters. If the pressure is abnormally high or if the fluid appears unusual, indicating some pathologic situation, the Queckenstëdt test should not be done, or at least it should be postponed until the patient is in a situation where immediate surgical attention can be given if necessary. If the Queckenstëdt test is done, the external jugular veins should be compressed gently and slowly. The spinal fluid pressure in the prone position is normally between 100 and 150 millimeters of water. On compression of the jugular veins and in the absence of a block, the fluid will rise from 50 to 100 millimeters or more in about ten seconds and on release of pressure, it will fall to its original figure in an equal length of time. A sluggish rise requiring twenty or thirty seconds to reach its

top level is suggestive of a partial block, provided the caliber of the needle is not too small. Ordinarily, if a partial block is present, the fall will be longer delayed than the rise. Such a finding, especially when accompanied by a positive test for globulin or increased protein, even if the fluid is not yellow, is highly suggestive of spinal pathology and merits extended investigation. A water manometer should be used in preference to a mercury manometer. The guess as to whether the spinal fluid is under increased pressure or not from the manner in which it flows from the needle is valueless. Fluid may flow drop by drop, and yet when the drops are allowed to collect in a manometer, an extremely high pressure may be indicated.

4. Under no circumstances in doing a diagnostic lumbar puncture is it necessary nor should the spinal canal be allowed to run dry.

When should a lumbar puncture be done? Obviously, it is not necessary to incorporate this test as part of the examination of every patient; but, more specifically in reference to the subject of this paper, when a patient presents pain of such a character as has been described, unaccompanied by other signs and symptoms of visceral disease and particularly if the pain is increased by straining, coughing, sneezing, etc., a lumbar puncture is in order. If the possibility of a spinal tumor is entertained in such cases, the incidence of mistaken diagnosis would undoubtedly be lowered.

How often can a lumbar puncture be expected to arouse suspicion of a spinal tumor? In a report of 208 cases, Elsberg¹⁴ found a complete absence of any interference with the normal flow of cerebrospinal fluid in no cases of intramedullary tumor and in only three cases of extramedullary tumor.* In less than twenty per cent of Elsberg's cases was the protein content of the spinal fluid as low as 50 to 90 milligrams per cent, 40 milligrams per cent being the upper limit of normal.

Good prognosis and recoveries have been variously reported after the removal of benign spinal tumors.

Elsberg¹⁴ states, "It is surprising that perfect recovery with disappearance of all subjective disturbances will often occur when the cord has been deeply indented and much flattened by a long standing compression. The improvement in most of the patients occurs very quickly so that after three or four weeks an individual who had lost all power before he was operated upon, may be walking without support. In others, however,

*There were 130 extramedullary tumors; complete block in 71.0 per cent; partial block in 26.6 per cent, and no block in 2.4 per cent. Of the intramedullary tumors, there was complete block in 71 per cent; and partial block in 29 per cent.

several months will elapse before much power is regained. The return of motor power often precedes that of sensibility so that good motor function has been regained at a time when the sensibility disturbances are still marked." He further reports that 90 per cent of the patients with extramedullary benign tumors either recovered entirely or almost so.

Elsberg²⁰ also reports one patient who had marked spastic paraplegia and was unable to stand or walk for several months, who recovered almost fully within three months after removal of the tumor. The spasticity disappeared and she walked well. Adson, in reference to the totally removed benign tumors states, "A 25 per cent loss of function is usually recovered within three months, a 50 per cent loss requires from six to twelve months, a 75 per cent loss requires up to eighteen months, and a total loss requires up to two years unless the injury to the cord has been so extensive that recovery will never take place."

The following three paragraphs are quoted from Dandy:¹⁹

"Unless the paralysis has endured too long, perfect restoration of function will usually follow extirpation of all of these tumors. The single exception was a patient whose limbs were firmly fixed in contraction and in whom, aside from a bilateral Babinski, no reflexes could be elicited. Sensory motor and sphincter functions had been totally abolished for two and a half years."

"When one sees the deep depression in the spinal cord produced by one of these tumors—usually the spinal cord seems reduced to about one-half its normal cross-section—one marvels at the perfect function that returns. The conclusion can be safely drawn that despite this gross depression in the cord, the fibre tracts are still intact for some time after complete paraplegia develops. Only the transmission of impulses is blocked."

"Doubtless much of the reduction in size of the cord is due to loss of water and of the vascular bed—a protective compensation similar to that which has been shown to exist, but to a much greater extent, in tumors and destructive lesions in the cranial chamber. The rapidity of return of function after removal of the tumor is remarkable. If paralysis has not been longer than a few weeks, movements will frequently begin in thirty-six to forty-eight hours, and the patient will be able to walk out of the hospital in less than a month. The longer the paralysis has persisted, the slower will function return, but even after paralysis of several months' duration, complete return of function will follow, though it

will be much slower. The quick recovery of motor and sensory power after removal of spinal cord tumors is apparently quite analogous to the quick return of vision after extirpation of pituitary tumors—the functions in both instances being 'physiologically blocked'."

Craig²² after an experimental study of cord compression, found pathologic changes to consist of vacuolization and cystic degeneration, fibrous proliferation, and cellular degeneration. He attributed these changes to interference with the blood supply, stasis, inanition of the tissues, and edema.

The order in which motor and sensory function and the various modalities of sensation return varies. It depends a great deal on the location of the tumor in relation to the cord. In a general way, the functions to return first are those mediated by tracts which are not adjacent to the tumor. Tactile sensibility returns early, then the discrimination of pain and as a rule, the discrimination of temperature last.

In evaluating the possible recoverability of cord function, the rapidity with which the symptoms and signs of cord injury have made their appearance is of greatest importance. Everyone is aware of the fact that sudden compressions of the cord such as those sustained with a fracture of the spine are likely to be anatomic destructions and irrecoverable. On the other hand, an almost complete loss of cord function which has developed gradually over a period of months or years, due to extramedullary compression, may be largely physiologic and may be almost 100 per cent recoverable. Nervous tissue in general can tolerate an incredible degree of compression and distortion if these forces develop slowly enough to allow the tissues to adapt to the changes. Nervous tissue tolerates sudden changes in this respect very poorly, and it is for this reason that experimental duplication of the situation produced by a benign spinal tumor is practically impossible. If a marked compression of the cord has slowly developed and one finds some evidence that the cord is not entirely blocked, such as the preservation of a degree of light touch or ever so slight a degree of voluntary movement, he may be justified in believing that much of the loss is physiologic and recovery hopeful. When authors state that a case of complete paralysis made full recovery, a close analysis of the case report will usually disclose the fact that some evidence of cord function had been retained.

Oldberg²³ in a recent paper points out certain factors relevant to prognosis which will undoubtedly be agreed to by everyone who has ex-

perience with spinal cord injuries. He states, "Paraplegia from any source, whether traumatic, neoplastic or infectious, when associated with complete flaccidity and total absence of tendon reflexes existing more than a day or two in the first instance, and more than a few hours in the other two, is an almost hopeless prognostic sign despite removal of the cause." There are exceptions to this rule, such as one described by Walshe²⁴ in which case a complete physiologic lesion of the cord was manifest for twenty-six days. The patient made a slow recovery during which the legs passed from complete flaccid paralysis (of six to fourteen days' duration) through a condition of paraplegia in flexion to that of paraplegia in extension (making its first appearance twenty-six days following onset of the lesion). Recovery nine months later consisted of a weak power of extension and good recovery of all forms of sensation. Such cases must, however, be very rare.

The recoverability of function of the spinal cord after prolonged compression involves some interesting physiologic implications. It is an accepted fact that if an axis cylinder in the spinal cord is anatomically severed, regeneration can never occur. This remains an unexplained mystery when one considers the relative ease with which regeneration of a peripheral axone takes place. One anatomic difference in the two cases is that peripheral axones are accompanied by Schwann cells while the axis cylinders of the cord are not. The nature of the nerve fiber, whether dendrite or axone, in the anatomic sense, plays no rôle because centripetal as well as centrifugal fibers regenerate in the peripheral nerve. Although it is known that Schwann cells precede the axis cylinder in its regeneration²⁵ the inability of cord fibers to regenerate remains unexplained.*

In the light of present knowledge it must be accepted that nerve fibers can remain physiologically blocked to the passage of impulses due to compression over a long period of time without in the least being anatomically destroyed. That pressure might block the transmission of impulses is understandable and it is equally understandable how the release of pressure is often followed by a rapid restoration of function. One the other hand, it is difficult to understand why, as in one

of the writers' cases (L. A.) motor function began to return only after three months, and then progressed to almost complete restoration.

Several considerations arise immediately. If we assume that a pyramidal tract is physiologically blocked over a period of three or four months, reflexes will become established over lower levels and will assert themselves in the causation of spasticity, hyperactive reflexes, clonus and an extensor Babinski response. If one can imagine that the pyramidal block is suddenly removed and impulses pass freely as before, he wonders how long it would take for the higher reflex levels and volition to assume dominance again. That this in itself can occur at least within a few days to a week is attested by numerous cases and by one of the writers' cases (M. S.). In fact, it seems necessary to assume that in those cases in which the return of function is prolonged, something is responsible for maintaining the block to the passage of impulses at the site of the lesion.

When considering the degree to which the cord can be compressed without anatomic injury to nerve filaments, the writers cannot account for the decrease in size at the expense of water and vascular bed alone. Although no opportunity has yet been afforded for microscopic verification, we are of the opinion that much of the reduction in size is at the expense of myelin. It may well be that the transmission of impulses is not resumed until the integrity of the myelin sheath is restored. It is believed that, ontogenetically, function appears only in the event of myelination. That certain classes of nerve fibers are never myelinated does not necessarily stand in opposition to this reasoning. Grinker²⁵ states that myelin is not necessary to conduction because unmyelinated fibers conduct very well and fibers which are destined to be myelinated may function before myelin is laid down. He states that early in demyelinating diseases, conduction probably proceeds through naked axones. Grinker further points out, however, that myelin changes morphologically during conduction and that it may furnish material for metabolism of the nerve.

Erlanger²⁷ has made some fascinating observations which would indicate that myelin segments between the nodes of Ranvier act as cell units. When a segment is stimulated at the node, the potential of the entire segment is quickly altered. This acts as a stimulus to the succeeding segment through the next node. He would feel, therefore, that the progression of the nerve impulse in medullated fibers is saltatory and that the segments act as units. This mechanism may account for the fact that conduction of the nerve impulse

*In tissue cultures axones are capable of growth without the presence of sheath cells. Experimental work which has been done on embryonic and newborn rats has demonstrated the possibility of the growth of nerve fibers into and across a lesion after a complete or partial transection of the cord;²⁶ also that the immature spinal cord possesses remarkable powers of physiologic reorganization which may lead to full return of function below an almost complete separation of the cord. Gerard and Grinker show that although some growth of nerve fibers from the cut end of axones may appear, return of function due to anatomic regeneration has not been proved.

is much faster in medullated than in non-medullated nerve fibers.

It is an interesting fact that after section of a peripheral nerve, not only does the severed nerve fiber degenerate, but the myelin along with it. This amorphous substance evidently bears a very intimate relation to the neuron and the fact that it disintegrates along with the nerve fiber is strongly suggestive that it is an integral part of the cell rather than only a detached insulating substance. It is not improbable that under the stress of slowly increasing pressure, the myelin may disappear, leaving more hardy and less space consuming nerve fibers. It may be that impulses are not conducted along a myelinated fiber, a part of which is devoid of myelin, but conduction will be resumed in the event of remyelination.

CASE REPORTS

Case 1. L. L., a white male, sixteen years of age, was referred to the department of orthopedics on December 21, 1935. Six months previously he had developed an aching pain in the posterior aspect of the right hip. At first it had bothered him only when he worked hard. About two months before admission when he was attempting

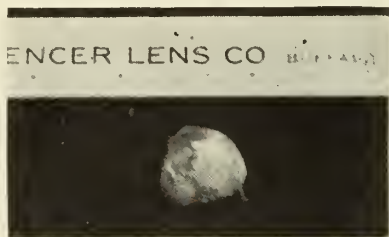


Fig. 1. Perineurial fibroblastoma of caudal root. (Case 1.)

to pick corn, the pain became so severe he was obliged to quit. It was most troublesome on stooping and arising. Coughing and sneezing made the pain distinctly worse. He had been confined to a chair for one week before coming to the hospital. The patient had lost sixteen pounds in the six months prior to his admission. He had been afebrile and the general and neurologic examinations were entirely negative except for some stiffness of the neck and a moderately positive Kernig's sign on both sides. He located the pain to a spot over the posterior superior spine of the ilium. The pain did not radiate and the region was not tender.

The usual laboratory examinations were negative. A lumbar puncture between the fourth and fifth lumbar spinous processes yielded only five cubic centimeters of yellow fluid. The test for

globulin was markedly positive. One cubic centimeter of descending lipiodol was injected into the cisterna magna and demonstrated a block just below the third lumbar vertebra.

Operation: Upon the diagnosis of caudal tumor, a laminectomy was done eighteen days after admission to the hospital. When the dura and arachnoid were incised, the cauda equina was observed to lift over a tumor in the region of the fourth lumbar vertebra. The tumor itself did not come into view until the roots were reflected. An oval-shaped benign tumor was found to be free of attachments except to one of the roots. This root was stripped from the capsule and the tumor easily removed. (See Figure 1). It measured 2.0 by 1.7 by 1.2 centimeters and proved to be a perineurial fibroblastoma. The patient recovered uneventfully and has remained free of pain.

Discussion: The outstanding clinical feature in this case was the severe progressive pain unaccompanied by demonstrable organic changes. A low lumbar puncture led directly to the suspicion of a cord tumor. The findings in this case were partly responsible for the lipiodol injection in the case of A. K., to follow.

Case 2. A. K., a white female, sixty years of age, was referred to the department of orthopedics in August of 1935. Her chief complaint was pain in the left hip. She was free of complaints until four months before admission when a continuous dull ache developed in the left hip. The pain became so severe that she could not lie comfortably in bed and preferred to sleep in a chair.

The general examination was essentially negative except for a diagnosis of Tay's guttate choroiditis. The temperature, pulse, and respiration were normal. There was some limitation of movement of the lumbar spine, but no limitation of movement in either hip, although she complained of pain during all movements of the left hip. X-rays revealed a scoliosis of the dorsolumbar spine with hypertrophic arthritis and hypertrophic arthritis involving the lumbosacral articulations. The pelvis was reported normal by the department of gynecology. Blood cultures for Malta fever, typhoid and paratyphoid were negative, as was the Wassermann test.

Treatment: She was treated by traction and physiotherapy (heat and massage). In fifteen days she felt somewhat improved and demanded that she be allowed to go home. Forty-three days later she was returned to the hospital in a stupor. She had been lethargic for twenty-four hours. The condition was ultimately found to be bromide poisoning, from which she recovered in the de-

partment of psychiatry. Two spinal punctures were made while the patient was on the psychopathic ward. The first was made between the fourth and fifth lumbar vertebrae and the findings aroused no great suspicion of an intraspinal lesion, although the fluid revealed a positive test for globulin and 88.8 millimeters per cent of protein. However, twenty-seven days later another puncture between the second and third lumbar vertebrae yielded a small amount of xanthochromic fluid which jelled on standing and proved to contain 1,600 milligrams per cent of protein. A consultation with the department of neurology added the additional finding of some relative weakness of the left leg to extension and flexion. She then complained of pain over both sacroiliac regions radiating down both thighs, but more so on the left. There was no evidence of sensory impairment. While in the department of neurology, frequent sedatives including morphine were necessary to allay the severe and constant pain. No position seemed comfortable but she felt that lying flat on the back helped a little. Descending lipiodol was injected into the cisterna magna and revealed a definite block between the second and third lumbar vertebrae. She was transferred to the neurosurgical service with the diagnosis of cord tumor.

Operation: Two interesting observations were made at the time of operation. The dura was opened first, with the arachnoid left intact. An oval-shaped tumor immediately came into view in the region of the third lumbar vertebra. By leaving the arachnoid intact it was possible to study the mobility of the tumor. With each respiration, the tumor made an excursion up and down the canal, a distance of about one centimeter. It was free everywhere except for its firm attachment to one caudal root on the left side. It was necessary to sacrifice this root, after which the tumor was easily lifted from the canal. The tumor measured 2.3 by 1.9 by 1.8 centimeters, was well encapsulated and proved on microscopic examination to be a perineurial fibroblastoma. (See Figure 2). The patient made an uneventful recovery and has remained free of pain.

Discussion: Aside from the four months' delay in arriving at the correct diagnosis, three factors are worthy of being stressed.

1. Continuous and unabating pain of such severity as to require drastic sedation. Pain of arthritic origin, sciatica and lumbago ordinarily is improved, and does not grow worse under orthopedic treatment and physiotherapeutic measures.

2. The mobility of the tumor observed at oper-

ation demonstrates clearly how tugging on the root to which it is attached and rubbing the adjacent roots can, even with each respiration, be the cause of pain which is interpreted as continuous pain. It also demonstrates how coughing, sneezing, and straining may increase the pain.

3. Inasmuch as the tumor did not completely occlude the arachnoid canal but allowed some circulation of cerebrospinal fluid, it is clear how a lumbar puncture caudal to the tumor may yield relatively normal findings. In this case, however, there was an increased protein and globulin. The Queckenstedt test would undoubtedly have aroused suspicion of an obstructing mass. In such instances where pain is referred to the lower back or down the lower extremities, and a lumbar

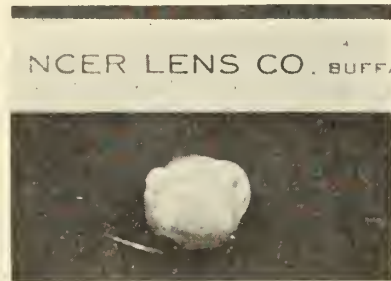


Fig. 2. Perineurial fibroblastoma of caudal root. (Case 2.)

puncture is done, the puncture should be made as low as feasible, that is, between the fourth and fifth lumbar vertebrae.

Case 3. L. A., a white female, thirty-two years of age, entered the department of neurology on May 5, 1936. Thirty-two months before admission she had begun to drag the right foot, and in a few months the left. She then experienced numbness in both hips. Paresis of the lower extremities progressed until in fourteen months she became confined to a chair. Her legs were "jerky" at times. Her feet became painful and the pain was more intense when the patient was reclining. Coughing, sneezing, and straining did not increase the pain. She stated that when she turned on the side her legs always assumed the flexed position. For eighteen months there had been swelling of the ankles and legs, more marked in the evening. For six months, there had been frequency of urination, about every half hour. For four months she had experienced a constricting feeling across the lower abdomen and back and a "tingling" feeling in the legs and feet. Her weight had decreased from 140 pounds to 96 pounds in the past four years. The past history was unessential except for a hysterectomy because of myomata uteri in 1931.

Physical examination: The general physical examination was essentially negative. The temperature was 99 degrees; the pulse 72; and respirations 20. The blood pressure was 90/60. The Wassermann test was negative, the blood examination was negative except for a secondary anemia; and the urine examination was negative. The neurologic examination was negative above the level of the xyphoid process. Sensation was lost below this level except for some sensation of light touch. (See Figure 3A). The deep reflexes of the lower extremities were equal and hyperactive. The Babinski response was extensor on both sides. Abdominal reflexes were absent. There was bilateral ankle and patellar clonus.

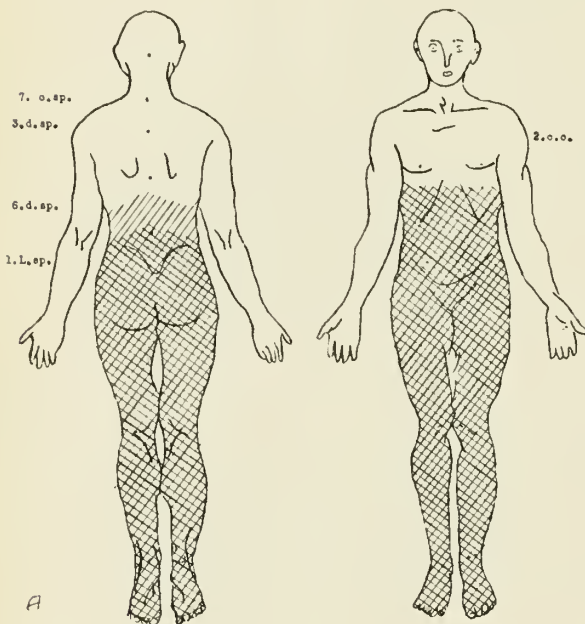


Fig. 3A. Sensory Chart of Case 3. In the region of the double cross-hatching, the findings were as follows: pain, 0; thermal, 0; light touch, 25 to 50 per cent; vibration, 0; two point discrimination, lost; sense of position, lost. In the region of the single cross-hatching, pain and thermal sense was about 25 per cent. Tone and deep reflexes were markedly increased in the lower extremities and the Babinski responses were extensor. Voluntary movement was completely lost. There was no fecal incontinence, but there was urinary frequency every half hour.

A lumbar puncture revealed a pressure of six millimeters of mercury, and there was no change on compressing both external jugular veins. The fluid was clear but showed a positive test for globulin. An x-ray of the spine showed a slight increase in the inter-pedicle distances of the third, fourth and fifth vertebrae on the right, and the pedicles of these vertebrae on the right did not appear quite as prominent as those on the left.

Operation: Upon the diagnosis of a tumor in the region of the fourth thoracic vertebra, a laminectomy was done. A benign appearing extradural tumor was disclosed on the left side. It

completely enveloped the left fourth nerve and extended into that intervertebral canal. It extended anterior and posterior to the dura and had compressed the dural canal to at least one-third its normal size. Intradural pulsation was definite above, but absent below the tumor. The tumor was completely removed along with a section of dura to which it was substantially attached. It proved to be a meningeal fibroblastoma. (See Figure 3B.) The wound healed uneventfully but the patient showed no sign of recovery in sensation or motor function. She was discharged in fourteen days unimproved.

The subsequent course, however, was as follows: four months following the removal of the tumor she regained the power to wiggle the toes a little. From this time on she improved progressively so that fifteen months after the operation, she walked into the hospital. The significant features in the check up examination were:

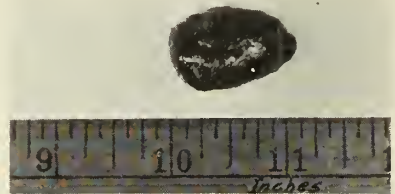


Fig. 3B. Extradural meningeal fibroblastoma. (Case 3.)

1. Slight retention of spasticity in both legs, although the Babinski response was now flexor on the right.

2. Sense of vibration and position were only slightly impaired. Two point discrimination was appreciated over the shins, but only when the points were about seven times the normal distance apart. Pain, light touch and temperature seemed normally appreciated in both legs.

Discussion: Among the many factors of interest concerning this case is the eighteen months' period previous to operation during which she was completely paralyzed in the lower extremities. The presence, however, of ankle and patellar clonus and the retention of some sensation to light touch indicated that the cord was not completely and anatomically transected and fostered the hope that removal of a benign tumor might be followed by a measure of recovery. The tumor itself was an extradural meningeal fibroblastoma which, had it continued to grow, would probably have become the dumb-bell type. Hope of recovery was abandoned when no signs of improvement made their appearance in the sensorium or in motor function within a reasonable

period of time. They made their first appearance, however, about three to four months postoperatively and improvement continued to a striking and practically complete rehabilitation which was beyond expectation.

Case 4. M. S., a white female, thirty-eight years of age, was referred to the department of neurology on September 27, 1936. Her complaint was motor paralysis and anesthesia below the waist line. In the summer of 1933 she had developed a right upper quadrant pain which was thought to be gallbladder colic; however, a cholecystectomy did not bring relief. The pain became increasingly worse and in October, 1935,

around the right side to the back. She could not tolerate the slightest touch to the region of referred pain. She had often been awakened with a severe cramp in the epigastrium during which she could hardly breathe. The family and past history were irrelevant.

Physical Examination: The general and neurologic examinations were essentially negative except for the findings shown in Figure 4A. The temperature was 98.6 degrees; the pulse 72; respirations 20; and the blood pressure 130/85. The neck was somewhat stiff. She could move the toes a slight amount on great effort. Muscle tone was markedly increased in the lower extremities and the deep reflexes were hyperactive. The Babinski response was extensor on both sides.

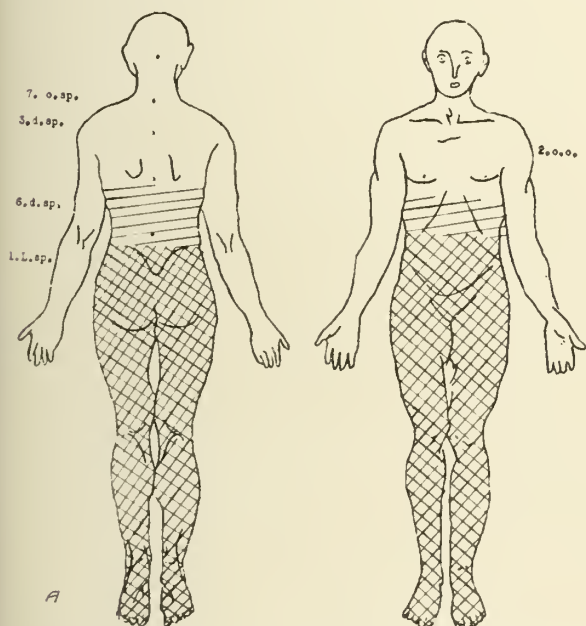


Fig. 4A. Sensory Chart of Case 4. In the region of the double cross-hatching, the findings were as follows; pain, 0; light touch, 0. In the region of the single cross-hatching, the appreciation of pain and light touch was 50 to 75 per cent of normal. Tone and deep reflexes were markedly increased in the lower extremities and the Babinski responses were extensor. Sustained ankle and patellar clonus was present. Voluntary movement was limited to very slight flexion and extension of the toes and ankles. Control of the bowels and bladder was almost but not completely lost.

she experienced such a severe attack, with nausea and vomiting, that a diagnosis of common duct stone was made and the common duct was explored. A spinal anesthetic was attempted preparatory to this procedure, but no anesthesia was secured. Following the operation, however, for the first time she began to experience numbness, tingling and weakness in the lower extremities. These symptoms progressed rapidly until she was completely paralyzed below the waist line. This was accompanied by almost complete anesthesia and incontinence of the bowels and bladder. She continued to complain of excruciating pain in the epigastrium which radiated

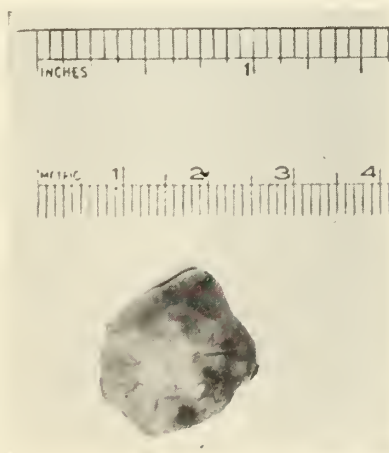


Fig. 4B. Intradural perineurial fibroblastoma. (Case 4.)

Laboratory Findings: The urine, blood and blood Wassermann tests were negative. A spinal puncture at the second lumbar interspace revealed a spinal fluid pressure of 130 millimeters of water in the prone position. The pressure rose slowly to 156 millimeters upon compression of both jugular veins. The spinal fluid gave a markedly positive test for globulin and contained 257 milligrams per cent of protein. There were four lymphocytes per cubic millimeter and no blood. One cubic centimeter of lipiodol was injected in the cisterna magna and demonstrated a block at the level of the fifth and sixth thoracic vertebrae.

Operation: With the diagnosis of cord tumor a laminectomy was performed under avertin anesthesia. As soon as the dura was incised, a benign, cherry-sized tumor came into view. The tumor was situated more toward the right side of the cord and had flattened the latter anteriorly

and toward the left. The cord at this point grossly appeared to be about one-third its normal size. The tumor was attached to two posterior roots on the right and had no substantial attachment to any other structure. It was easily extricated. The tumor proved to be encapsulated and measured 2.0 by 1.7 by 1.2 centimeters. (See Figure 4B.) The microscope revealed elongated cells in whorls and the diagnosis was perineurial fibroblastoma. The patient recovered uneventfully and remained entirely free of pain. Sensation and motor function returned with remarkable rapidity. On the ninth postoperative day light touch was normally appreciated on the legs; pain and temperature about fifty per cent. Vibratory sense, two point discrimination, and sense of position of the toes were absent. After eighteen days she could walk alone. A check up examination nine months later revealed nothing of a positive neurologic nature.

Discussion: Aside from the fact that this case is another demonstration of the fact that cord tumors may provoke signs and symptoms which simulate other syndromes, it is a spectacular illustration of the recoverability of cord function. Since abdominal pain had been experienced for three years, some idea may be had of the age of the tumor. Anesthesia and almost complete motor paralysis with impaired function of the bowels and bladder had a rather sudden onset, and was present for eleven months before removal of the tumor. (The relationship of the onset to the attempted administration of a spinal anesthetic is not clear.)

SUMMARY

Four illustrative cases of benign spinal tumor are presented, two in the caudal region and two in the high thoracic region. Both caudal tumors were attached to only a nerve root. One was suspected on the basis of pain which was increased on coughing. A lumbar puncture revealed findings which verified the suspicion and a lipiodol injection located the tumor precisely. The other caudal tumor was overlooked for some time, its final discovery being to all intents accidental, although the first lumbar puncture revealed findings which unmistakably pointed to spinal pathology. One can easily see why perineurial tumors of the cauda equina are more notorious for causing a prolonged stage of pain unaccompanied by objective signs than are similar tumors in the region of the cord. One of the tumors in the high thoracic region, an extradural meningeal fibroblastoma, was removed from a patient who exhibited a prolonged postoperative period before showing signs of recovery.

The patient presenting the other of these tumors, an intradural perineurial fibroblastoma, was operated upon after a mistaken diagnosis of gallbladder disease during the pain stage. The cord signs developed suddenly and were almost complete after an attempted spinal anesthesia preparatory to a common duct exploration. This patient is illustrative of rapid and complete recovery of cord function. Both of these patients exhibit the striking recoverability of cord function even after an almost complete loss of function for as long as eleven to eighteen months.

CONCLUSIONS

1. A spinal puncture could serve as the means of suspecting or diagnosing the presence of a spinal tumor during the prolonged pain cycle, and thus reduce the high percentage (10 per cent) of mistaken diagnoses.
2. The marked reduction in size which the spinal cord can undergo from slowly increasing compression without destruction suggests that the reduction in size may be partly at the expense of myelin. A long delay in the appearance of signs of recovery after removal of a tumor may be due to compressive demyelination.
3. Practically complete recovery of cord function may be reasonably expected after removal of a benign tumor even when almost complete loss of function has existed for as long as eighteen months. A delay of four months before recovery begins should not necessarily discourage the hope for a good prognosis.

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ETIOLOGY

Malnutrition is rarely, if ever, a primary condition. There are usually causative factors whether or not one may be able to determine them. These may be grouped under the following headings, of which there are of necessity many subdivisions: heredity, infections and infestations, diet, and disturbances of psychic or neurologic origin.

Heredity: Hereditary factors in the malnourished child may enter from a number of angles. There may be a distinct hereditary characteristic in growth which is probably of endocrine origin. There may be extremes of this condition such as are rarely seen in dwarfism. There may be a distinctly hereditary tendency toward diabetes mellitus. Another condition worthy of much more study than it has received up to the present time is the allergic state which certainly bears the stamp of hereditary tendency. Physicians are acquainted with the allergic manifestations of childhood such as eczema, asthma and pollenosis, but there are gastro-intestinal manifestations which are not so well understood. Too often, probably, the offending factors are in the common foods such as milk, eggs and wheat.

Infections and Infestations: Infections are a frequent causative factor in the malnourished child. The most common chronic infections are those localized in the nose and throat. Even these infections may at times be difficult to diagnose and evaluate properly. Tonsils and adenoids may have been removed and persistent chronic nasal sinus infection with few objective findings may remain. Chronic infection of the gastro-intestinal tract may be difficult to diagnose. Occasionally dental infections may occur which give very few objective findings and may be located only after prolonged dental study. In addition to the localized infections, it is necessary to keep in mind the generalized chronic infections such as syphilis, the rheumatic state, and tuberculous disease, as well as the chronic febrile states, such as malaria and Malta fever. Beyond the field of infections one must always recall the possibility of a practically symptom-free parasitic infestation of the intestinal tract. Round-worms and pinworms are more common in this latitude than many physicians believe.

Diet: Dietary inadequacy plays a definite rôle in producing undernourishment in childhood. The best evidence of the inadequacy of our diet is the presence of dental caries in about eighty to ninety per cent of children examined. Since so large a percentage of our child population shows some evidence of malnutrition, it becomes

THE UNDERNOURISHED CHILD*

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It is quite impossible in the time assigned for this presentation to cover the field in a thorough manner. It is desired to bring out in this paper points of interest and practical usefulness to the practitioner, and it is hoped that some of the material will be of such value to you.

Each case of malnutrition in the child is an individual problem. No hard and fast rules can be laid down regarding the etiology, diagnosis or treatment. The criteria on which one bases the diagnosis of malnutrition are multiple. The criteria in determining the state of nutrition must include: the presence or absence of anemia, posture, type of body build, rate of growth, firmness of muscular and other body tissue, dental caries, resistance to infection and the ability to maintain effort, both mental and physical, without fatigue or irritability. Expressed in other words, there is no single yardstick in the survey of the nutritional state. Brenneman¹ has rendered an invaluable service in discouraging the use of weight and height charts as the index of nutrition. We are, of course, all aware of the anorexia which follows the feeding of a child with a height and weight chart as the primary factor determining the nutritional status.

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

evident that it is not entirely poverty and lack of food which produce it. The poorer classes, no doubt, have less opportunity to obtain protective foods and those better able to afford protective foods do not recognize them. Boyd² thinks that our diet is chiefly deficient in calcium, Vitamins A, C, D and G, in iron in infancy, in protein during childhood and in iodine in certain geographic areas.

Psychic and Neurologic Factors: Psychic factors in malnutrition are probably more important today than ever before. In our long sustained, poor economic state there is a decided tendency toward family limitation. With such a state of affairs come more and more families with few or single children. The tendency, likewise, is to "overcare" for the few children. We, as physicians, are in no small measure to be blamed for the psychic feeding difficulties in malnutrition of childhood. We tell the parents the foods which the child should have daily and the parents interpret our instructions quite literally. They try to administer the foods prescribed daily, first by offering, then by coaxing and threatening and usually, lastly, by bribery or force. The mental processes of the "negative" child on the "king's throne" are hard to circumvent but easy to see. No child can be made to swallow and it is my impression that very young children are aware of this fact. More can be gained in knowledge regarding psychic factors in feeding difficulty and malnutrition by eating a meal or two with the family than by hours of parental questioning. This may be well illustrated by the boy of eight years at the table looking his father straight in the eye and throwing down the challenge, "Dad, I'll eat that egg sandwich for a quarter." No further information is needed. Obviously the parents are mastered and not masters any longer. Furthermore it is apparent that the parents are absolutely helpless in the hands of this child. In addition to the many psychic disturbances there are a few true neurologic problems such as the congenital mental defectives, that is, the mongols, microcephalics and hydrocephalics. Beyond these are the few organic neurologic problems following some of the cases of meningitis and encephalitis.

DIAGNOSIS

History: In order to evaluate the nutritional state of a child one must obtain a dependable history, make a thorough physical examination and employ such laboratory examinations as are necessary. In taking the family history, it is necessary to inquire into hereditary characteristics of growth, endocrine disturbances, rheumatic

tendencies, allergic manifestations, tuberculous infections, and dietary habits. In the past history and the present illness one must consider the type of delivery, the neonatal history, the type of feeding in infancy, the eating habits of infancy, habits of elimination, all illnesses of infancy and childhood, allergic symptoms, intestinal parasitic infestations, and infections just preceding the malnourished state. In addition, the present eating and sleeping habits, elimination, disposition and evidence of fatigue must be investigated. If possible, the growth and weight curve of previous years should be recorded. A record should be made of any treatment which has been tried to correct the undernourished state.

Physical Examination: In making the physical examination, look particularly to the lip and nail bed color, posture, firmness of body tissue, evidence of infection about the mouth, nose, throat and teeth. Examine closely for postnasal drip and hypertrophy of lymphoid tissue on the posterior pharyngeal wall. Cervical regions should be palpated for enlarged nodes. Lung fields should be well examined and it is well to bear in mind that a primary tuberculous complex may give no physical findings. Cardiac examination should be thorough and one must recall that a rheumatic state may exist without evidence in the history of a true rheumatic fever with joint pains. Careful abdominal examination may bring to light, when coupled with a good history, a chronic appendiceal involvement of an inflammatory or obstructive nature. This was well brought out by Nicholson³. In the general survey, one should look for any gross evidence of endocrine disturbance.

Laboratory Examination: Laboratory procedures are used, of course, in the most part for ruling out or confirming infections and infestations and for determining endocrine disturbances. The laboratory procedures done depend upon the indications following the history and examination. Urine, blood and stool studies should be routine measures. By blood studies are meant, not only the determination of hemoglobin, red blood count, white blood count and differential count, but also Wassermann test and agglutination tests for Malta fever, typhoid and paratyphoid. Intestinal parasites are much more prevalent among children than the average physician is inclined to believe. Although stool examinations are tedious and unpleasant, there are methods available at present which enable one to do very satisfactory stool examinations. Competent stool examinations routinely done will amply repay the physician for time spent. The tuberculin test is of

great value in determining the presence or absence of the first infection type of tuberculosis. In the presence of a positive tuberculin test, an x-ray of the chest is indicated. If the child shows evidence of upper respiratory tract disease, x-rays of the paranasal sinuses should be taken and thorough nose and throat examination done. Occasionally it is well, if indicated by history or physical findings, to check the basal metabolic rate and obtain x-rays of the bones to give assistance in diagnosing endocrine disturbances. In the presence of gastro-intestinal symptoms, x-ray and fluoroscopic study of the gastro-intestinal tract may be of assistance. In the rare cases of chronic mucous gastritis described by Kerley⁴ aspiration of the stomach may be indicated to determine the residual fasting content and to obtain such content for study.

TREATMENT

Hereditary factors may or may not be amenable to treatment. The type of body build and the characteristics of growth may be transmitted by heredity. It is not unusual to see a child or an adult with the type of body build which never did and never will conform to our height and weight charts. In spite of that discrepancy, however, the individual may show no sign of malnourishment. Hereditary causes of malnutrition such as diabetes mellitus can be well controlled. Other endocrine disturbances may not respond at all. Infections may be difficult to localize and the chronic infections in the paranasal sinuses are exceedingly difficult to treat and overcome. Dental infections may be difficult to localize, but once localized they can be treated effectively. The chronic gastro-intestinal involvements, such as chronic appendicitis, are often difficult to diagnose and one may have to wait for an acute phase before one can be absolutely certain that such involvement is present. Repeatedly, children have been seen, who have been a great source of trouble from the standpoint of malnutrition and abdominal pain; they will eventually develop an acute abdominal state and the condition be diagnosed as appendicitis. Following this episode and surgical treatment of the appendiceal involvement these children make an uneventful recovery from the malnourished state and abdominal distress.

Treatment of the generalized infections such as the rheumatic infections, tuberculous infections, etc., may be greatly prolonged and time-consuming. They may demand, in addition to dietary and medical measures, a prolonged period of rest in bed. It is not unusual for a chronic

rheumatic infection with cardiac involvement and severe malnutrition to demand bed rest over a period of months. In the private practice of medicine one of the most difficult problems is that of convincing the parents that prolonged rest in bed is necessary and that it is possible to accomplish such a measure. Many parents state that it is impossible to keep the child in bed. It may tax ingenuity and patience to try to figure out ways and means of keeping this child in bed at home. In fact, it may be necessary for a while to demand hospitalization in order to teach the child how to rest and that rest in bed is possible. There are times when, with best possible medical and dietary treatment in bed, the patient seems to improve very little. Four or five months may be spent in trying to get improvement started; and then out of a clear sky suddenly the malnourished, infected child will begin to gain in weight and soon will have a normal state of nutrition.

Dietary Adjustments: Even when the physician knows what type of diet the child should take and even when the parents have been educated regarding this dietary regime, it may be impossible to get the child to take the diet. Various authorities have published diets adequate for various age groups and for adults. According to Boyd⁵ most of these dietary instructions for childhood are in accord with the following as daily requisites:

1. One quart of milk.
2. One egg.
3. Two or more liberal servings of vegetables, one of which should be raw and one of which should be pigmented.
4. Similar amounts of fruit, part of which should be raw.
5. Liberal amounts of butter.
6. Fresh lean meat or fish once a day, if possible.
7. Cod liver oil (a good grade) in an amount of at least one teaspoonful daily.

In addition to these foods, which are considered the foundation stones in the diet, cereal products and fats in amounts sufficient to complete the caloric needs may be given, but none of these should be used to replace any of the foods specified in the protective list. Many children will not take this dietary, even though it is offered to them. Jeans⁶ has found that many malnourished children will do well on a celiac diet, which is high in proteins and monosaccharid sugars and low in fat. He feels that it is much more likely to increase weight than the small bulk, high fat diets which are less readily utilized and absorbed by the malnourished child. There are some mal-

nourished children who take milk well but eat practically nothing else. Some of these demand complete temporary removal of milk from the diet in an effort to make them eat some of the other foods. Every effort should be made to take care of the vitamin needs, if at all possible. Sometimes the administration of Vitamin B will produce a better appetite. Other so-called "tonics" of the iron, quinine and strychnine variety do not promote appetite except insofar as the alcoholic content may be of value.

In the treatment of the undernourished child whose chief factor is that of a psychic disturbance, we occasionally find it impossible to take care of the child in his home environment. Where a child has learned that he is able to demand remuneration from his parents for every bite of food he takes it is obviously impossible to correct the condition at home. In such a case one must find a completely new environment for the child. The greatest problem may be in convincing the parents that the child must be sent away and that they must keep away from him entirely. Summer camps are often of value in treating such psychic cases of malnutrition. A better arrangement, in my own opinion, however, is to place the child in a family where there are a large number of children and where no one will pay any particular attention to the amount of food which the malnourished child will eat. If he is placed in a family where there are a number of children about his own age, he will find that the chief occupation at mealtime is that of obtaining and eating foods rather than talking about them. With cooperation on the part of the parents, a summer or two of such a regime will usually remove the psychic factors. We cannot stress too strongly the fact that in the treatment of the malnourished child there is no single specific and there is no single road to success. Treatment often calls for extreme patience with the child and much psychotherapy for the parents.

SUMMARY

1. The yardsticks of nutrition are multiple.
2. The etiologic factors in the malnourished child may have relation to infections, infestations, heredity, diet and disturbances of psychic, neurologic and endocrine origin.
3. In determining the status of an undernourished child, competent history, physical examination and laboratory studies are needed.
4. The treatment may vary in each individual case. Treatment consists in the elimination of causative factors where possible, rest, and dietary and environmental adjustments.

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CARDIOVASCULAR SYPHILIS*

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The clinical study of cardiovascular syphilis constitutes one of the most interesting chapters in the entire field of medicine. Cole¹ has pointed out that more advancement has been made in the knowledge of prevention, diagnosis and treatment of this condition since the discovery of the *Spirochaeta pallida* and the initiation of modern specific therapy than in any other form of heart disease. Despite this fact, syphilis is still a major cause of chronic heart disease, ranking fourth to hypertension, rheumatism and the senile degenerative changes. Of these four causes syphilis is the only one for which preventive measures are known and available. There is ample evidence that syphilis is a curable disease if it is early and adequately treated and the latent structural manifestations in the cardiovascular system can be prevented, symptoms improved and life prolonged. Many aspects of this problem cannot be adequately considered in a discussion of this length, and this paper, therefore, will deal with the concepts pertaining to the diagnosis and treatment which are of vital concern to every practitioner.

We know that syphilis invades the cardiovascular system in a variety of ways. The lesion most commonly encountered clinically or anatomically is an aortitis which may be localized or diffuse and accompanied by dilatation of the aorta. Therefore, the term cardiovascular syphilis refers, in approximately 90 per cent of all instances, to syphilis of the aorta and those conditions secondary to it which may or may not affect the heart primarily. Syphilis may involve the arterial system in other parts of the body, most commonly in the brain, producing a thrombosis or rupture of the vessel with hemorrhage. Peripheral vascular thrombosis exclusive of the cerebral circulation is relatively uncommon. Syphilitic arteritis of the pulmonary arterial system causes Ayerza's disease and produces a syndrome of cor pulmonale. Furthermore, one must remember that in a group of patients with vascular syphilis there will be a certain percentage who have syphilis of other struc-

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

tures such as the innominate and subclavian arteries, the liver, the optic nerves and the occasional involvement of bones. Syphilitic aortic disease, like central nervous system syphilis, is a very late manifestation of the original infection, and of these two, cardiovascular syphilis constitutes the most frequent lethal consequence of the infection. Cole's studies reveal evidence of concomitant involvement of the central nervous system in connection with cardiovascular syphilis in 49 per cent of 191 cases. However, the coincidence is probably less frequent in patients of private practice and in those who have had treatment. This close relationship is of particular importance from the standpoint of treatment. Measures used in one might prove disastrous when employed in the other form. Along this same line of thought, in a large group of patients with syphilitic heart disease, one will find frequent complicating diseases of a non-cardiac type. Some of the more common complicating problems are diabetes mellitus, pulmonary tuberculosis, gastric and duodenal ulcer, primary and secondary anemia and urologic entities in those individuals of the advanced age groups. There may be other complicating cardiac conditions such as hypertension and arteriosclerosis which may be contributory factors having some aggravating influence on the course of the cardiovascular syphilis. These factors also are of great differential diagnostic interest and are present in close to 50 per cent of the cases. It is generally known that involvement of the heart and great vessels increases with each decade of life. It is the cause of aortic regurgitation in a high percentage of the age group between forty and fifty years. It is the cause of all heart disease in approximately four per cent of patients of private practice as compared with fifteen per cent of those of hospital groups. Factors of race, sex and occupations reveal that strain and heavy manual labor contribute materially to the development of the major structural lesions in the aorta.

The serologic blood tests, perhaps the most valuable diagnostic criteria, may be positive in approximately 90 per cent of the patients with latent untreated syphilis, yet these tests, even in the presence of structural heart disease, do not constitute a diagnosis of cardiovascular syphilis and may even be negative. Hinton³ emphasized the fact that the Wassermann reaction does not throw light on the stage of the disease, the character, the extent, the duration or activity of the lesion, nor is it a guide to treatment. The invasion of the aorta by the spirochetes may begin from the time of the appearance of the chancre or within a few weeks or months thereafter. Syphilitic invasion

of the aorta by the *Treponema pallidum* is possibly universal in all syphilitic individuals. However, the invasion does not of itself constitute clinical disease and may fail to cause a significant reaction, if effective treatment is instituted early. The reason for the period of latency is unknown but it averages about fifteen to twenty years in 90 per cent of the cases. Stokes⁴ points out that, "Syphilis, in its attack upon the aorta, begins as a periaortitis and mesaortitis. The inflammatory changes in and about the aorta achieve their importance not only through their effect upon the vessel wall but through their location in respect to the heart. The nearer the infiltrative process is to the aortic ring the graver is the situation of the patient and the more certain is the development of regurgitation and myocardial damage by way of coronary injury. Contrawise, the higher up the ascending aorta the arch is involved, the more probable is the development of an aneurysm, by virtue of an intact aortic valve in maintaining a high diastolic pressure against a weakened vessel wall." The symptoms of bulbar involvement are those of myocardial insufficiency resulting from aortic regurgitation and by way of coronary injury, while those of aneurysms are rather late earmarks of localized pressure. The coronary arteries are practically never involved by syphilis except as the aortic disease may cause narrowing or even complete occlusion of their ostia. Aortitis may be complicated by fusiform or saccular aneurysm, usually of the ascending portion of the aorta or the arch, rarely in the descending portion or the abdominal aorta.

The disease has usually developed far before the patient complains but the complaints usually arise from one of four structural changes or their combinations: first, luetic aortitis weakens the aortic wall so that it dilates or if it progresses beyond this phase the wall becomes aneurysmal; second, it may invade the aortic cusps and their supporting structures, rendering the valve incompetent; third, it may attack the mouths of the coronary arteries, producing angina pectoris; and fourth, it may produce either directly or indirectly a decline in the ventricular efficiency. Gumma of the myocardium, single or multiple, is comparatively uncommon. Syphilitic myocarditis is rare and existence of this lesion is denied by some pathologists. Numerous studies have been made concerning the frequency of involvement of the cardiovascular system in patients with syphilis, with indices not entirely in accord. In general, it is believed that the incidence is probably between ten and fifteen per cent, and that involvement of the heart or great vessels increases with each dec-

ade of life. In the Cooperative Clinical Group studies¹ 69 to 84 per cent of the patients with the late crippling manifestations of aortic syphilis had received no or imperfect treatment.

In the diagnosis of syphilitic aortitis it is necessary to obtain evidence of syphilitic infection and to identify disease of the aorta. Failure to recognize an early aortitis is due in part to the silent course of the lesion and in part to the confusion arising from the fact that symptoms and clinical signs which it produces may be closely duplicated by two common non-syphilitic conditions, namely, essential hypertension and arteriosclerosis. The central problem in the clinical study of cardiovascular syphilis is the early diagnosis of syphilitic aortitis in the uncomplicated stage. It is generally known that the symptoms and signs of cardiovascular syphilis are diversified and may be entirely absent. However, their absence does not constitute a lack of activity. It is of interest to note that of 83 patients in Wile's⁵ series who came to the hospital with the chief complaint referable to their cardiovascular system, 86 per cent were found, on admission, to have an aortitis with an insufficiency or an aneurysm. Early diagnosis, therefore, during the period of latency must be based on suspicion, and particular significance should be attached to the minor physical findings. A careful, comprehensive, general and cardiovascular examination is required to establish the diagnosis. Routine cardiac examination should include accurate historical data of past medical events, information relative to the subjective cardiac complaints, an objective physical examination, fluoroscopy and cardiac x-ray, electrocardiographic studies and other laboratory examinations as indicated.

When symptoms occur, the two most commonly encountered are pain and breathlessness. These are symptoms of cardiac failure and cannot be ascribed to either dilatation of the aorta or aneurysm. Pain across the upper part of the chest may be frankly anginal and often it is less characteristic. It is usually boring in character and not necessarily brought on by exertion. Breathlessness is usually the result of cardiac failure but may be contributed to or caused by compression of the trachea, bronchus, or the lung. White⁸ has recently called attention to the fact that anginal pain of itself is no proof of an aortitis with obstruction of the coronary ostia, even when the serologic reaction and past history of syphilis are positive. This statement is based on the fact that coronary arteriosclerosis is the most common cause of angina. The Cooperative Clinical Group has recently adopted seven so-called cardinal cri-

teria for the diagnosis of an uncomplicated syphilitic aortitis as a result of the careful studies of Moore and Metildi.⁶ They are:

1. Teleradiographic and fluoroscopic evidence of aortic dilatation.
2. Increased retromanubrial dulness.
3. History of circulatory embarrassment.
4. Tympanitic, bell-like, tambour accentuation of the aortic second sound.
5. Progressive cardiac failure.
6. Substernal pain.
7. Paroxysmal dyspnea.

It is generally believed that the presence of three or more of these criteria in a syphilitic patient under fifty years of age, free from mitral disease and in the absence of hypertension, is strong evidence for the diagnosis of an uncomplicated syphilitic aortitis.

When the process in the aorta extends to involve the aortic ring and valve it produces an insufficiency with to and fro systolic and diastolic murmurs. The diastolic murmur is more significant. It is usually blowing, high-pitched and best heard in the second right interspace or along the left sternal border. This murmur has its onset with, or immediately after the second heart sound. The murmur is better perceived with the Bowles type of stethoscope and as a rule with the patient upright and leaning forward. The systolic murmur is a usual finding in a number of conditions in which there is aortic dilatation, syphilitic aortitis, hypertension, arteriosclerosis or aortic stenosis. The peripheral vascular signs are extremely helpful and consist of hyperactive pulsation of the arteries, a water-hammer or so-called Corrigan pulse, and Duroziez's sign. When aneurysms occur the diagnosis is more readily established although it should be borne in mind that the size of the aneurysm is not nearly as marked a factor in the production of symptoms as the location.

Aneurysms usually manifest themselves by pressure on surrounding structures and these symptoms may include difficulty in swallowing from esophageal pressure, breathlessness, stridor and cough from tracheal pressure, and if erosion of the trachea occurs there may be bloody sputum. Tracheal tug is due to pulling on the left bronchus. Paralysis of the vocal cords is due to recurrent laryngeal nerve pressure, and if the left sympathetic nerve is caught and paralyzed there is a sinking in of the left eyeball with a narrow pupil. Inequality of the radial pulses or the blood pressure in the two arms is most commonly due to involvement of the innominate artery. If there is erosion of the surrounding bony

structures there is severe pain. The diagnosis is usually made by an analysis of the symptoms, signs, blood examination, fluoroscopic and radiographic studies. When the luetic process involves the mouth of the coronary arteries, there is a diminished blood supply to the myocardium and all possibilities exist that attend an inadequate coronary circulation. Anginal attacks may occur and sudden death is not uncommon. Thrombosis of the coronary arteries as a result of syphilis in the branches of the vessels themselves occurs rarely, if ever.

For the detection of aortic deformities, an x-ray examination is indispensable; no other method suffices. Most radiologists believe that the combined use of fluoroscopy and teleroentgenography is essential. There are silent stages in the course of syphilitic aortic disease when its value is doubtful, but the findings may add much presumptive evidence. When the aorta dilates, the density of the root shadow is increased, its curves become fuller; however, they retain their smoothness and the ascending aorta takes on more prominent bulge to the right. Aneurysms of the aorta present very diverse x-ray pictures. In orthodiagrams and teleroentgenograms many measurements have been devised with the idea of expressing the size of the aorta in numerical terms, but most of these are subject to error or misinterpretation and do not add much to a simple judgment of the form and area of the vessel. Changes in the aorta resulting from arteriosclerosis and hypertension frequently present confusing problems. In general, arteriosclerosis leads to elongation and tortuosity with a horseshoe shaped aortic arch deformity in which calcium may be distributed as small, isolated plaques and granules. Kemp and Cochems⁷ have recently shown, in a study of 1,000 unselected syphilitic and 600 non-syphilitic patients, that teleroentgenographic study alone of the supracardiac structures gives no diagnostic proof of differentiation. Radiographic study of the anatomic cardiac changes must be evaluated on the basis of the other clinical findings.

No characteristic electrocardiographic abnormalities or arrhythmias are noted in syphilitic aortitis and its complications; however, conduction changes may be present, due primarily to the concomitant arteriosclerosis, hypertension and coronary sclerosis. The most common changes noted are abnormal T waves, intraventricular block, extrasystoles and left axis deviation. The occurrence of an auricular fibrillation in heart disease is actually strong evidence against syphilitic aortitis.

From the above consideration it is evident that the early diagnosis of the occult manifestations of cardiovascular syphilis is difficult. Numerous clinical and pathologic studies reveal an accuracy of the ante mortem diagnosis in approximately 50 per cent of the cases. There is strong presumptive evidence that early adequate treatment of syphilis with arsphenamine and the heavy metal preparations has a highly protective effect against the development of a syphilitic aortitis. In Cole and Usilton's² series of 935 patients with early syphilis who received immediate and adequate treatment and who were followed from ten to twenty years, one to 6.7 per cent subsequently developed clinically detectable cardiovascular syphilis.

It is impractical to advocate a standard method of treatment for patients who have already developed the late structural manifestations of a syphilitic aortitis when one considers the possibility of complicating syphilitic lesions in other systems, non-cardiac pathology, and cardiac disease of a non-syphilitic nature. The many complicating problems imply that each patient should have individualistic consideration. The criteria for institution of specific therapy are based on the stage of the disease and its manifestations and not upon the reaction of the blood test. In general, it is the consensus of opinion that treatment should consist of potassium iodide and bismuth or mercury therapy over a period of several months, followed by an estimation of the response to treatment or intolerance to therapy. Following this probationary period of conservative treatment in selected cases, neosalvarsan may be administered judiciously in small doses, usually with a maximum of 0.3 gram per injection. Duration of life in those patients treated with small doses of arsenical preparations is longer than those treated with large doses, and the improvement of symptoms is more marked. The use of heavy metal compounds and neosalvarsan must be decreased in dosage or entirely stopped if toxic symptoms arise. There must also be a pause in the specific antiluetic therapy if congestive failure supervenes, except for the use of the mercury diuretics, salyrgan or mercupurin which may be used in dosages of two cubic centimeters weekly until the congestion is cleared up. Patients with minor involvement of the aorta and few symptoms may be successfully treated as ambulatory patients, and allowed to continue their physical activity. Patients with aortic dilatation, aneurysm or aortic regurgitation are less tolerant to treatment and must be limited in physical activity. In the group who has suffered one or more attacks of

congestive failure, treatment must be ultraconservative and should also include management of the cardiac insufficiency. In this latter group of patients with congestive failure there is a rather current opinion that antisyphilitic treatment is hopeless; however, it should be remembered that rest is the chief remedial measure in the treatment of syphilitic aortitis in all its forms and that prolonged and absolute bed rest promotes better tolerance to antisyphilitic therapy and better response in improving the cardiac reserve. Certain patients with syphilitic aortitis are best left untreated. These are usually older individuals, without symptoms, often with neurosyphilis as well, in whom cardiovascular syphilis is discovered accidentally. It should be emphasized in conclusion, that the physician should treat each patient as an individual problem and not syphilis as a disease.

SUMMARY

1. Cardiovascular syphilis is predominantly aortic syphilis, the heart being involved only secondarily. Aortic syphilis and cerebrovascular lues constitute the two major lethal manifestations of latent syphilis and may occur concomitantly. The central problem in the clinical study of cardiovascular syphilis is early diagnosis of syphilitic aortitis in the uncomplicated stage.

2. The symptoms and signs of cardiovascular syphilis are diversified and may be entirely absent in the early stages. Careful, comprehensive, general and cardiovascular examinations are required in the early stages of aortic syphilis to establish the diagnosis.

3. Treatment of cardiovascular syphilis is early and adequate therapy for syphilis before the latent manifestations develop. The treatment after the major structural manifestations develop must be individualized, consisting in general of rest, iodides, heavy metal preparations and the judicious use of the arsenical compounds.

Discussion

Dr. George H. Clark, Oskaloosa: Dr. Harrington is to be commended for bringing before us such an important paper on cardiovascular syphilis and for the manner of its presentation. In my discussion, I wish to emphasize four points, all of which the essayist has mentioned, which appeal to me as especially vital in the consideration of this disease. They are:

1. The high percentage of adult syphilitic patients who have cardiovascular involvement.
2. The great difficulty in making a diagnosis of uncomplicated syphilitic aortitis.
3. The hopelessness of treatment when it is started late in the course of the disease.
4. The reward of adequate early treatment.

In considering first the high percentage of adult luetic individuals who have cardiovascular involvement, I do not mean that simple invasion of the aorta by the *Treponema pallidum* which is probably universal, but rather those cases with actual demonstrable involvement, either gross or microscopic. Figures from different investigators will naturally vary but Worthin reports that 90 per cent show involvement; Langer places the figure between 70 and 80 per cent, and Malcolm Goodridge accepts the statement that syphilitic aortitis accompanies 70 per cent of all visceral syphilis. In the face of these figures, one is forced to admit not only a possibility but a very grave probability that unchecked syphilis will invade this part of the body. A normal sense of preparedness dictates that the more likely a structure is to invasion by a disease, the more necessary are accurate, reliable methods for its diagnosis.

This brings us to the second point which I wish to emphasize, namely the great difficulty in making a diagnosis of uncomplicated syphilitic aortitis. Clifford and James, in discussing this problem, write as follows: "Though so essential, it is always difficult or more often impossible to discover this pathology early. It will always be a problem, because the average patient consults a physician only when pain, discomfort, or visible disease is present, and early uncomplicated aortitis is painless and symptomless."

Moore, Dangle and Reisinger found that in a series of 105 cases of syphilitic aortitis, which were proved at autopsy, only 3.8 per cent had been diagnosed during life. Paroxysmal dyspnea has long been considered one of the most constant symptoms of early aortitis but Keefer and Resnick, in a review of necropsy records from the medical clinics of Johns Hopkins Hospital found twenty-four cases of uncomplicated syphilitic aortitis, not one of which had shown a history of having suffered from this complaint. Physical signs and symptoms are minimal, the electrocardiograph is of little or no value in the diagnosis of this condition, and Kemp and Cochems conclude, after an extensive roentgenologic study of 1,000 syphilitic individuals that there is no evidence the diagnosis of uncomplicated syphilitic aortitis can be made by the teleroentgenograph alone. Surely these statements would be discouraging to anyone hoping to make unerring early diagnoses of this disease.

My third point, the hopelessness of treatment when started late in the course of the disease, I feel is most clearly and simply stated by Clifford and James in the following single sentence: "When cardiovascular syphilis is clinically recognizable, it has passed the stage of cure, and its grave prognosis is ordinarily confirmed by death within two years of its discovery." Unfortunately, reports of other authorities are in general accord with this prognosis.

In contrast to the hopelessness of the foregoing, is my fourth and last point, the reward of adequate early treatment. I again call to your attention the figures mentioned by Dr. Harrington to show the low incidence of cardiovascular involvement in cases with

adequate early treatment, namely only 6.7 per cent. It is because adequate early treatment can accomplish this great reduction in the incidence of so hopeless a complication that I ask us all constantly to remember that the initial lesion of cardiovascular syphilis is the primary chancre, and that efficient early treatment is the prophylaxis which proves our most effective therapy. I close with the words of Clifford and James: "To avert its onset is far more important than to acquire an unerring ability to recognize its destructive and devastating end results."

Dr. Herman J. Smith, Des Moines: The pathologist who examines slides of tissue and makes a diagnosis of syphilitic involvement relies largely upon the discovery of perivascular lymphocytic infiltration. The point, of course, is that syphilis is primarily a vascular disease. In whatever organ or tissue of the body syphilis makes its appearance, it produces its pathology as an expression of tissue response to a specific interference with blood supply. When we recognize this fact we can appreciate how fundamental in any discussion of visceral syphilis is a consideration of its ravages in the cardiovascular system. We can understand, too, why it is that the circulatory system shares with the central nervous system first place on the list of tissues in which late syphilis makes its appearance. Both Dr. Harrington and Dr. Clark have stressed the futility of our diagnostic ability in catching early the appearance of syphilis in the cardiovascular system, and I shall not belabor the point further. I merely want to remark that, by the time aortic dilatation can be demonstrated by the fluoroscope or by the x-ray, or by the time that an amphoric, accentuated, second aortic sound can be heard with the stethoscope, the process is already a comparatively late one.

In the syphilis clinic of the Polk County Broadlawn General Hospital in Des Moines, out of some 580 syphilitic patients under treatment, approximately ten per cent have some evidence of abnormality in the cardiovascular system. In 70 per cent of this group with cardiovascular symptoms or signs, however, it has not been possible to demonstrate any convincing evidence that the findings are due to syphilis. Ten per cent of this group have presumptive evidence of an aortitis. It is interesting that in one of this group the infection was acquired only three years previously. The remaining twenty per cent are equally divided between those with a definite aortitis and those with clear cut evidence of regurgitation. The youngest patient in the latter group is only thirty-one years of age. It is worthy of remark that four out of five patients in this group with definite aortic regurgitation have a history of irregular and inadequate treatment or none at all. Again substantiating Dr. Harrington's figures, one-third of our patients with definite cardiovascular syphilis show a concomitant neurosyphilis.

In the specific treatment of cardiovascular syphilis, our chief reliance in this clinic has been placed on the heavy metal and iodide preparations. Because of its small content of arsenic, mapharsen, the newest

of the intravenous arsenicals may prove to be a safer drug than arsphenamine for the more intensive treatment of circulatory system lues, but our experience with it in this group of cases is not yet sufficient to warrant a conclusion.

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DEPRESSIVE STATES IN GENERAL PRACTICE*

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We could spend considerable time laying the limits of what we consider depressed, elated, and normal feelings. Having established these limits we could find a discussion of the elations interesting, as well as consideration of the depressive states. As physicians, we find the elated patient less often in our practice, for he fails to realize his condition. He is not uncomfortable and he is fairly efficient; hence he does not consult the physician. The mildly depressed patient usually would not think of consulting a psychiatrist, for if he suspects the nature of the complaint he usually denies the mental origin of his troubles by substituting physical symptoms, thus excusing to himself his mental inefficiency. Because of this tendency he becomes a diagnostic as well as a therapeutic problem to the general practitioner. Too many of us in our general practice fail to

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

consider depressive states of a lesser degree than the classical emotional depression, difficult thinking, and decreased psychomotor activity of Kraepelin's depressed insanities. Persistence in seeking this triad of symptoms will cause us to miss the milder depressions which cause physical symptoms, and which are present with little obvious difficult thinking or psychomotor retardation. Add to this the fact that few patients spontaneously come to us complaining of emotional depression, and we have the reason the depressed states are so often undiagnosed.

We are consulted by the patients for a host of physical complaints. In men these are often headaches, cardiac palpitation, or abdominal distress. Women add to these symptoms various pelvic discomforts, complaints of lacking ambition, or that they are "just nervous." Seldom does the physician receive spontaneously from the patient the complaint of loss of sexual desire or loss of potency, but when questioned the condition is found present in practically every case. Insomnia of all grades is found, from disturbing dreams and light sleep to the more absolute degrees of total inability to sleep. This with the loss of appetite often causes weight loss, which may be moderate or extreme. In one of my personal cases a 160 pound man, with no demonstrable physical difficulties, dropped to 100 pounds, which loss I explained on the basis of his insomnia and anorexia. Usually the patient feels worse in the morning, and regardless of the complaint, there is usually the morning increase in intensity. The headache is present on awakening and as the day progresses or after he has had his breakfast, the headache decreases. There is a marked loss of morning appetite in many cases, and more distressing palpitation of the heart early in the day. Later in the day metabolism increases and there is a lessening of the melancholia, and a freedom from physical symptoms. In the milder depressions the patient may become his normal self by evening, only to have this cycle recur the following day. The insomnia is a troublesome feature which carries to the patient's mind a great many more fears of the detrimental results than are warranted by the actual loss of sleep. Falling asleep is sometimes difficult, but more often the early awakening is the thing to be avoided in the patient's mind. When he awakens it is too early to get up and he cannot return to a restful sleep. He tosses and worries for several hours and dozes off about the time for the alarm to ring. Then he awakens, tired and pepleless, feeling totally unprepared for the day's duties.

If the patient happens to be one who has given

much concern to sexuality it becomes a distinct cause of worry to him. Women patients much more readily accept the lack of desire or frigidity than do male patients. In the male, if this symptom is foremost in his mind, he is very likely to seek a urologist first if there is one available. The findings of the urologist reveal perfectly normal organs and the patient is still further depressed at his inability to improve in this function. The psychoanalytic school of psychiatrists sees in this sexual impotence the cause of the entire disease. It is no doubt important in the condition, but the fact as to whether it is all important has never been determined. As general practitioners, we should be open-minded, at least to the extent of looking for this symptom and considering it an important one of the disease. The patient's melancholia should be sympathetically investigated, for in these admitted feelings of depression lies our clue as to the severity of the disease, and what precaution should be taken to protect the patient from his suicidal tendencies. If he complains of fear on being alone, if he cries a great deal, if there is an anxiety for which he will not ascribe a good reason, we should inquire as to the presence or absence of thoughts of suicide. In very mild cases this may not be present; in very depressed cases it is usually admitted. More important to the physician than the patient's statement that he contemplates suicide is the suspicion of suicidal trends brought to his mind by complaints of unexplainable crying, palpitation, breathlessness, fear of death, and indescribable anxiety. Frank statements of contemplated suicide should not be ignored, but they are more often indicative of a psychoneurotic patient's plea for sympathy, than of the cyclothymic individual's suicidal trend. Methods of committing suicide are determined by publicity and ease of availability. Very seldom is the suicidal thought so fixed in the mild depressions that the patient can die only by one, sometimes, difficult method. I often test my patients' desire for suicide by leaving, where they can reach it, a bottle containing one-half strength tincture of iodine. If the purchase of this is made at the drug store, the druggist will label it tincture of iodine, and invariably attach a poison label. If the desire is not great, and the fear of death predominates, the "poison label" repulses the patient and the iodine is undisturbed. If the iodine is taken it leaves nothing but a tell-tale stain with no more serious results to the patient than an equal amount of alcohol would cause.

The diagnosis and treatment of emotional depressions are closely concerned with the cause of

these depressions. Of the more important causes which might be mentioned are those in which the feelings are depressed by the patient's reaction to conditions which affect them, either without or within the body. Of these we can mention one very important cause which has concerned all of us in the last ten years; namely, the financial losses to which our patients have been subjected. It is not difficult for us to recall, either in our practice or at least within our acquaintance, several bankers who have reacted with depressed emotions because of losses which they could not control. Our women patients have reacted with depressions when their social standing was threatened by financial or other conditions. In the same class might be placed fears and worries due to bodily conditions which seem to overwhelm the patient, and we must not always expect that the precipitating factor is one which would be generally sufficient to cause such a reaction. As practitioners of medicine we must take into account many times, that the patient has had a depression produced by the factors which in many others would be insufficient to cause difficulties. The patient may have insight into the condition causing the trouble, but because of a rigidity in his demands and an unimaginative personality which prevents him from accepting the unpleasant, he cannot adjust himself to the situation. Such an emotional depression can be produced in any person, the determining factors being the patient's nature, resistance, and adaptability and the intensity of the condition against which he reacts.

Such situational depressions often follow physical diseases. An acute debilitating illness such as influenza may prove to be a frequent precipitating cause of depression. Especially is this true if the patient feels it necessary to return to work before a proper length of time has elapsed for convalescence. Finding himself unable to produce sufficient energy for his task, he lapses into an emotional depression which still further depresses the energy output. It has long been recognized that jaundice patients are depressed. Some physicians believe that lesser degrees of hepatic dysfunction can cause depressed feelings. If the patient is of a psychoneurotic type the reaction may be much more easily produced than if he has a more normal personality. There are other depressions which we should learn to recognize which are recurrent in type and the precipitating factor is many times not demonstrable. These people usually have a bad hereditary background and will be subject to more labile emotional reactions than the average person. These people react to prolonged strain with a depression of varying de-

grees. Men forced to work at tasks which are unpleasant either because of a natural dislike or failure in preparation may so react. Women finding housework unpleasant or married life uncongenial complain of lack of energy, loss of interest in life, and thoughts of self destruction. Sometimes they realize the cause of the trouble, at other times they fail to connect their discomfort with the troubles which they know are present. Another type of depression which we must always have in mind is the involuntional type. Coming in the period of life after forty-five or fifty years of age, it is more frequent in women than in men, and tends to become progressively worse. Our early recognition of it depends upon having the condition in mind.

In all emotional depressions a thorough physical check-up including x-rays and laboratory work is necessary. Along with this must go a searching mental examination which gives the examiner a fair estimate of the patient's intelligence, ambitions, emotional trends, likes and dislikes, sexual trends, and social consciousness. This estimate should be made without insistence on the part of the examiner that the patient understand everything as is demanded in psychoanalytic treatment. Without this thorough physical and mental examination, emotional depression cannot be diagnosed and we would here sound a warning against the too frequent diagnosis of emotional troubles, only later to find that there are also present physical conditions which are important. Likewise we should keep in mind that our patient can have both a physical and a mental distress present at the same time. According to Holman¹, "One not infrequently sees tragic mistakes in which the patient has been neglected because doctors have made a 'snap' diagnosis of neurotic symptoms."

One is led to feel that many times medical or surgical treatment is instituted which would be deferred until later if a thorough physical and mental check-up were made and the mental nature of the illness suspected. One of my patients wanted a tooth extracted because of abnormal occlusion. She did not express her fear of focal infection, but I knew it was there. I advised against the extraction but it was done, and examination showed the tooth healthy. In the several weeks' healing process which ensued, I was chided with the remark, "I can't see why you let me have that tooth pulled." In a consideration of the cure of any condition we must try to see the patient as a whole, considering his economic, social and familial relations, which recalls the following statement of Barker²: "We are gradually coming to learn that, though it is as important as ever

to pay attention to the changes referable to single organs, it is also important to remember that the human being as a whole is greater than the sum of his parts, and that we should pay more attention than formerly to the reactions of the human personality as a whole, that is to say, of the total psychophysical unit."

Under the subject of differential diagnosis the physician must consider organic conditions such as arteriosclerosis, general paralysis of the insane, and multiple sclerosis. The writer recalls one case in which Huntington's chorea proved to be the true diagnosis when there had been a question of depressed insanity because of the daily change, the very depressed emotions, the narrowed outlook on life and the threats of suicide. We should keep in mind the diagnosis of depressions, whenever we are tempted to diagnosis neurosis of the heart, stomach, or sexual organs. Probably the most important single sign which should be expected is the up and down swing of emotions which always occurs in these patients. We so often find a daily change, which goes under the term of diurnal change, in which the patient is low in the morning and improves as the day progresses. In the past too much importance has been placed on the inevitability of manic and depressive phases being associated. We may have depression and no preceding mania, or none following, and a depressed condition may result without more than a return to normal of the feeling tone. We have considered women more subject to emotional variations and the depressed type of reaction than men, and that seems to be true in hospital practice. Paskind³, in a study of 633 cases from the private record of Dr. Hugh T. Patrick of Chicago, found that the distribution was about equal between men and women.

When we consider the treatment of these cases, we must remember that they tend to recover without treatment and the period of depression is usually not over four months. It is better not to give the patient a prognosis as to time. We cannot, however, leave these patients to spontaneous cure without them feeling they have been neglected. As a result our own professional standing may be damaged by their report that we are not sympathetic. Patients who are reacting to some external or internal condition such as loss of money, prestige, fear of bodily illness, etc., will spontaneously cure themselves if the cause of the condition is relieved. This cannot always be done, and perhaps it would not always be wise to relieve the situation if it were possible. One patient in my practice became very depressed and presented many bizarre symptoms

when his grown daughter was married and moved to Chicago. He refused to reason or talk of his condition unless I would promise to return his daughter to the family home. His attitude was so unreasoning and his reaction so intense as to suggest a very strong paranoid trend. I may not have relieved that patient, but I relieved his physician by assuring the patient that I would do nothing for the purpose of satisfying his unreasonable demand. Possibly that daughter could have been returned to the parental home, but the demand was unnatural and the relieving of this situation could conceivably cause a greater and more serious one. I repeat that it may not always be wise to clear up the situation causing depression. We should be interested in educating our patient to adjust himself to unpleasant situations. The exciting situation may be but the immediate cause, but the remote cause of the trouble may be deep-seated in the personality of the individual. Consultations with a willing patient will do much to relieve this situation.

A painstaking examination of the neurotic type of person is a protection for the physician against oversight in diagnosis and a valuable therapeutic agent in acquiring the patient's confidence. The patient is assured that no serious pathology is overlooked and is confident that he has found a friend interested in him as an individual. So often the patient feels that the doctor sees in him only another case, and the neurotic patient is sure there never was another case like his. In the recurrent type of depression we are dealing with a more difficult and persistent type of trouble. It tends toward spontaneous cure or remission, but the course is more irregular. Very seldom is the course continuously up; the line of recovery is usually an irregular zig-zag curve. We must inform our patient what he may expect, so that he does not become more alarmed and depressed by the lability of his feelings. I often sketch for the patient on a piece of paper a curve similar to the wave of an ocean surface to which I compare the various ups and downs of every person's emotional tone. I then call attention to the fact that their emotional tone is probably greater than the average, with the waves deeper and the crests higher and steeper. These patients see the physician when they are in the trough of the wave; they turn themselves loose when they are riding the crest. A round of parties, social affairs, intense activities, meetings, business, etc., are the occupations of the elated crest of the wave; then comes the down grade with the depression which compensates and levels the wave. The patient can be brought to see that if he voluntarily makes the

crest of the wave higher, the trough will be deeper and steeper. If the patient can be taught to look for the upturn in feelings his depressed emotions will be relieved. I often suggest to these patients that they reverse the order and "turn off the gas" a little sooner when ascending the wave, so that there is less need for pressure on the brake during the descent. It is a homely illustration, but many psychologic truths are simple and must be made more so, for our patients to understand and follow.

As to the use of drugs we can only say that most of them act as placebos. Most physicians have their favorite placebo; I have used hemato-porphyrin injections in cases since 1935. I believe it helps to shorten the attack and improve nutrition in the patient. The younger patients respond better, and this is also the age group in which spontaneous remission is certain and more prompt. I believe it is a safe remedy to try, and along with generalized ultraviolet light therapy, is a valuable addition to our therapeutic armamentarium.

With reference to the management of women patients from thirty to sixty years of age, the expression "It's your age," is too threadworn to be of use. It has become so common that the busy physician finally acquiesces in the suggestion which every woman wants to believe. The attitude is harmless if it does not lead to useless medication with female sex hormones. Carlson⁴, in a study of estrogen in involutional melancholia, found the estrogen output was no different in amount in psychotic than in non-psychotic patients. Ault, Hoctor and Werner⁵ found that large doses of theelin produced rapid and effective results. They used 30,000 to 40,000 international units in oil in the first month, and later reduced it to conform to the needs of the patient. Other physicians are just as certain they see no benefit in treated patients as compared to untreated ones.

The general practitioner will find cases of depression if he is aware of their probable occurrence. He should have in mind also the possibility of suicide in emotional depressions and be alert to guard against its occurrence. This, in some cases, means hospitalization of the type that protects the patient. A thorough understanding of the patient and his problem should be attained early and the study of his reactions continued throughout the illness.

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DIVERTICULITIS AND DIVERTICULOSIS OF THE COLON*

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In my paper this afternoon I wish to discuss briefly a relatively uncommon but much discussed subject, that of diverticulitis and diverticulosis of the colon. By diverticulosis we mean the presence of diverticula, and by diverticulitis the presence of diverticula with inflammation. Diverticula of the colon are herniations of the mucosa through attenuated portions of the bowel wall and are usually covered externally by serosa or lie embedded in appendices epiploicae. These diverticula may be acquired or congenital, but the great majority are of the former classification. They may be single or multiple, but in most cases they are multiple. The acquired diverticulum, which is the type of importance, consists of a bottle-shaped pouch extruding from the lining of the bowel, composed of mucosal and serosal layers. Occasionally there may be attenuated muscle fibers between these two, but usually not. The true diverticulum is seldom found in connection with the colon, and when it does occur consists of all the natural layers of the bowel.

Authorities do not agree upon the incidence of diverticula of the colon for the population at large, but the estimates range from one to ten per cent. Most of the data on the incidence of this condition are for groups above forty years of age. Rankin and Brown¹ at the Mayo Clinic found 1,398 cases of diverticula in 24,620 roentgenographic examinations, a percentage of 5.67. At the Mayo Clinic 111 cases of diverticula were found in 1,925 autopsies from 1924 to 1928, or 5.2 per cent. This is probably not a true incidence since it includes cases with some symptoms referable to the colon. In this series of 111 cases of diverticula found at autopsy, all but one patient was over forty years of age. In a clinical series reported by Bargaen and others, in which 481 cases were found, one patient was in the decade of twenty to twenty-nine years; 19 were between thirty and thirty-nine; 80 were between forty and forty-nine; 191 were between fifty and fifty-nine; 151 were between sixty and sixty-nine; 40 were between seventy and seventy-nine; and four were

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

between eighty and eighty-nine. In this series the highest incidence, or 37 per cent of the cases, was found between the ages of fifty and fifty-nine years. Cases of diverticula have been reported even in young children, but these are rare and the chief incidence is in people past middle life.

Etiology: The influence of sex upon the incidence of diverticula is not great. However, slightly over half of the cases are found in males. Obesity has long been considered a predisposing cause of diverticulosis and probably correctly so, but it is not of paramount importance since many cases are noted in patients who are not and never have been obese. Diverticula do frequently occur in people past forty years of age who are obese and lead a sedentary type of life; and it is logical to believe that in such cases there is a fat infiltration into the bowel wall which necessarily separates and weakens the muscular layers and allows outpouchings when there is an increased intracolonic pressure. Various workers have also noted the frequent occurrence of diverticulosis in patients who had previously been obese and then lost weight. With this group the same weakening factors would be present in the bowel wall. Constipation is another factor which is inconstant, but does occur at least intermittently in well over half the cases. Judd and Pollock² found that 63 per cent of their patients with diverticulosis were also constipated. It is generally conceded that infection plays no part in the formation of diverticula, but it is the factor of chief importance in diverticulitis. The anatomic peculiarities of the colon probably account for the frequency of diverticula in this location. The fact that the longitudinal muscle fibers are grouped instead of being evenly distributed probably is an important factor. Many observers stress the influence of blood vessels as a point of weakness in the bowel wall, but this is not a proved point. In animal experimentation the weakest point of the bowel is usually opposite the mesenteric attachment, but this is not the site of most diverticula. To summarize the etiology of diverticula I wish to quote Hartwell and Cecil³, who say, "We therefore are driven to the conclusion that up to the present time no complete explanation of the primary cause of intestinal diverticula has been offered. The most that can be said is that, for some cause, a weakness exists in the intestinal coats, and by reason of this weakness, a pouching of the coats takes place when any undue pressure arises."

Pathology: No inflammation is present in the state of diverticulosis, but due to its anatomic structure inflammatory changes can easily occur to produce diverticulitis. Diverticula of the left

colon are subjected to greater danger of inflammation because the fecal current is less fluid and the tendency to the formation of fecaliths is much greater. Once a fecalith is formed it has difficulty in escaping through the narrow neck of the diverticulum and by remaining is likely to irritate the mucosa and start local inflammatory changes. The complications which may follow this type of inflammation are perforation, stricture, and fistula formation.

Symptomatology: Generally speaking there are few or no symptoms from a true diverticulosis, and those which do occur are of a mild innocuous nature. The symptoms of diverticulitis are many and show great variations from patient to patient, and in the same patient from time to time. Pain is probably the only symptom which occurs in every case and it may range from a mild abdominal distress to extreme degrees of severity. The pain is usually more to the left of the midline and below the navel but it may be localized in any part of the abdomen. The pain may be constant and dull but is more likely to be intermittent and cramplike if there is enough swelling to produce some obstruction. Most of the painful stimuli result from spasm of the irrigated segment of bowel, by stretching of nerve filaments due to swelling, or indirectly through obstruction. If the area of diverticulitis is close to the urinary bladder such symptoms as painful and frequent micturition are likely to occur and if perforation has occurred there will be pus, feces, and gas in the urine. If the inflammation develops in close proximity to any other organ the pain is likely to be referred through them. In many cases, especially where a diverticulum of the sigmoid is involved, the pain and other symptoms can usually be described as similar to appendicitis, except for localization on the left side. The patient will frequently run a temperature ranging from 99 to 105 degrees, depending upon the amount of inflammation and whether or not there is abscess formation or other complications. Constipation is a very common accompaniment of this condition and may be found alone or in association with diarrhea, the two conditions alternating. Ochsner and Barger⁴ found in a large series that in those cases of diverticulosis which involved the sigmoid flexure and descending colon 35 per cent had constipation of varying severity and 31 per cent had a mild diarrhea; and of the cases of diverticulitis, 63 per cent had complained of irregular bowel movements, 27 per cent had diarrhea and 36 per cent had constipation. In many cases a tender mass can be palpated. This is especially

true if the inflamed diverticulum is in the sigmoid flexure. Associated with constipation is distention and gas accumulation in the bowel. This is especially true if there is some obstruction which interferes with the normal passage of flatus. Vomiting is an inconstant sign and usually gives warning of an approaching obstruction. In a few cases where obstruction is incomplete the patient may complain of small or ribbon-shaped stools. Where perforation occurs and is not walled off there will be the usual signs of peritonitis.

Diagnosis: Since diverticulosis usually does not present characteristic symptoms it is ordinarily diagnosed by means of the x-ray during the course of a general examination. The diagnostic difficulties of diverticulitis, especially the chronic type, lies in the great number of symptoms, none of which is truly pathognomonic. Therefore, while a patient with a history of recurrent attacks of flatulence, generalized abdominal tormina, and irregular bowel action may arouse suspicions of diverticulitis, the final diagnosis depends upon the x-ray or the operating table. A sigmoidoscopic examination may be of value in detecting diverticula, but usually the area involved is too high to be reached by this procedure. The chief laboratory aid in the diagnosis of diverticulitis lies in the x-ray examination. The typical x-ray picture shows barium-filled sacculations projecting from the lumen of the bowel. These bottle-shaped shadows may be of a uniform density or appear as rings, indicating the presence of a fecalith in the diverticulum. These shadows are more usually multiple than single. The absence of the diverticulum shadow does not preclude the presence of them, since there may be sufficient inflammation and swelling at the bottle neck of the sacculation to prevent the entrance of barium. Often the roentgenogram merely shows a spasm with narrowing of the lumen at or near the site of the inflammation. The swelling of the mucosa involved may simulate carcinomatous infiltration, but usually some peristaltic action remains and can be detected by use of the fluoroscope. In order to obtain the best roentgen information of a suspected bowel one should exercise considerable care in filling the bowel with barium. The first procedure is the use of the barium enema, with fluoroscopy followed by pictures in different positions both before and after expelling the enema. The securing of pictures from different angles is not always necessary; the first plate will sometimes give the desired information, but due to overlapping, numerous plates are often required. Lockhart-Mummery⁵ has suggested a dual exposure method of distinguishing between organic

and spasmodic narrowings. He describes the method as follows: "Two radiographic exposures are made on the one film at an interval of ten seconds, the patient keeping still and holding his breath during this period. A peristaltic wave passing at this interval will cause the colon to have a double symmetrical outline. When there is any fixation or thickening of the bowel wall a localized single outline will be seen in the affected portion of the colon." If there are no obstructive symptoms it is safe to give barium by mouth and study the colon as it fills and empties normally. The diverticula once filled can often be detected days after the bulk of the barium has passed. On physical examination it is often possible to palpate a mass in the left lower quadrant. Blood examination is seldom diagnostic except that anemia speaks more for malignancy than diverticulitis. The degree of leukocytosis may be helpful in judging the severity of the infection.

Differential diagnosis: Regarding differential diagnosis of diverticulitis we must consider such conditions as colitis, appendicitis, and malignancy. Colitis can usually be excluded by a careful x-ray examination and sigmoidoscopy, but in borderline cases the differentiation may be extremely difficult or the two conditions may exist together. Appendicitis usually does not offer a great diagnostic problem except in a small percentage of cases where the pain of diverticulitis is referred to the right lower quadrant. In such cases it is safer to operate on suspicion of appendicitis. Since most cases of diverticulitis occur in people of the cancer age, malignancy forms the greatest differential problem. The safest guide in this differentiation rests with the x-ray studies which show in the case of carcinoma a shorter, more constant filling defect with more irregular margins and with more complete obliteration of mucosal markings. Also the malignant lesion shows more immobility and less irritability of the adjacent bowel. Either of these conditions may produce blood in the stool, but this is more likely with malignancy. Such conditions as gall stones, lues, tuberculosis and actinomycosis may cause confusion in diagnosis but can usually be ruled out on careful study.

Treatment: In the great majority of cases of diverticulitis, medical management is to be preferred to surgical, the latter being reserved for complications. The main principle in medical management depends upon elimination of the factors which cause inflammation. We have no method of controlling the inherent weakness which occurs in the bowel musculature in later life, but by proper management we can control to some

extent the character of the fecal current, a factor of prime importance in the production of diverticula and subsequent inflammation. As a prophylactic measure the susceptible patient should remain on a bland low residue diet in order to avoid residue which might irritate the diverticula. Of equal importance with the colitis type of diet is the continual use of mineral oil or similar bowel lubricant. Because this diet is very low in residue the use of a lubricant oil is imperative to prevent constipation. By keeping the fecal current more fluid in the sigmoid we lessen the tendency toward fecolith formation, and at the same time allow more complete emptying of the diverticula. In the acute cases with leukocytosis and localization, the patient should be placed in bed under careful observation. Hot packs should be placed on the abdomen if they give relief. If pain is severe, opiates and atropine may be used. Rectal irrigations with warm saline solutions are often useful, but should be used with caution because too much pressure can cause a perforation where the walling off of an abscess is incomplete. If there is no vomiting and no sign of obstruction the patient may be given a light diet and mineral oil by mouth. Most cases, if not too severe will subside in a few days under this management, but unless the follow up management is adequate there will likely be recurrences. The immediate care after an acute attack consists of limitation of activity, warm saline enemas or oil enemas, soft diet and mineral oil by mouth. These measures should be followed closely until the bowel action seems completely normal and the diet and mineral oil must be maintained indefinitely. Chronic cases should be treated in much the same way as the acute type between attacks.

If medical care fails to give relief and signs of obstruction or perforation occur, surgery is indicated at once. If there is abscess formation without signs of peritonitis it is often better to postpone surgery until the inflammatory process is well walled off. In the case of obstruction the surgical relief should consist merely of a colostomy, and the removal of the infected portion of the bowel should be done at a later date. If a case of proved diverticulitis also shows signs of malignancy it should be explored, since the two conditions do occasionally occur together.

Prognosis: In spite of treatment diverticula of the colon once formed tend to increase both in size and number. Where perforation and other serious complications do not occur the prognosis is good. Satisfactory results depend both upon proper care during acute attacks and careful management following the attacks.

CASE REPORTS

Case 1. The diagnosis was diverticulosis with achylia gastrica. The patient was a male, sixty-six years of age, with sedentary habits, who had suffered from many types of gastro-intestinal trouble since middle life. When first seen in October, 1935, he was complaining of an irregular type of indigestion with abdominal distress of an indefinite character. He said he felt well about half of the time. There was no belching or sour stomach, but such foods as berries, apples and beans caused slight nausea and variable degrees of diarrhea. Regardless of his care in avoiding irritating foods he had recurrent attacks of diarrhea lasting from one to several days. When there was diarrhea the stools contained much gas and mucus. The stool analysis showed a negative Meyers test and a marked increase of mucus. The sigmoidoscopic examination showed the mucosa to be injected but otherwise normal. The blood analysis was hemoglobin, 78 per cent; red blood count, 4,200,000; and white blood count, 6,300. The x-ray of the colon showed numerous diverticula of the sigmoid, but no evidence of inflammation. The patient was placed on a bland diet with additional vitamins and given mineral oil when necessary. The patient has continued to feel better, but still has attacks of diarrhea, possibly one-fourth of the time. The bowel action is sluggish and he frequently skips an entire day without a movement. This is a case of diverticulosis which has never developed definite diverticulitis, but illustrates how the presence of diverticula in the colon can influence the other existing pathologic conditions.

Case 2. The diagnosis was diverticulitis with primary anemia. The patient was a male, seventy-three years of age, who was first seen in October, 1935. The chief complaints were gas pains over the entire abdomen, pain inside the left hip, and generalized abdominal distress with considerable belching. The patient had been well until a few months previous to examination when he suddenly noticed a sharp cutting, constant pain over the left hip bone. This pain was not referred to the bladder, was very severe on standing but was relieved on sitting down. Occasionally he had pain in the right inguinal area. Since the trouble became severe the bowel movements had been loose and contained much gas and mucus. The possibility of intestinal obstruction was considered because of the gaseous distention of the abdomen and because the patient had a feeling of a stoppage in the bowel. The possibility of malignancy was also considered because of the patient's rapid loss of weight and strength. The

physical examination revealed a man of rapidly failing health. There was a large right inguinal hernia which accounted for the pain in that area. No palpable abdominal tumors were found. The gastric analysis was 14/0. The feces was of a gruelly consistency and gave a plus reaction for blood by the Meyers test. The urine was essentially negative. The blood showed hemoglobin, 65 per cent; red blood count, 2,560,000; and white blood count, 4,900. The blood smear showed a marked variation of size and shape of the cells. An x-ray of the colon revealed no evidence of a malignant growth, but showed many diverticula in the sigmoid. The patient was placed on specific treatment for the pernicious anemia and given a bland diet along with general measures for the diverticulitis, but continued to fail rapidly and died in a few months of pernicious anemia cord changes.

Case 3. The patient was a male, fifty years of age, who was first seen in July, 1937, with an acute abdominal condition. He had been in almost normal health except for recurrent attacks of influenza. A few days before admission to the hospital he developed pain in the left lower quadrant which rapidly became acute. On admission he had a temperature of 101 degrees, and a white blood count of 21,000. He was vomiting and also had diarrhea. A thorough physical examination showed nothing important except a tender abdomen with localization in the left lower quadrant. The sigmoid colon was easily palpable and tender, but there were no tumors. Pyelograms were negative. The urine remained normal except for an occasional trace of albumin and a few blood cells. All stools showed an increase of mucus and gave a positive Meyers test. Within six days the acute condition subsided under conservative treatment including a bland diet, and warm enemas. The temperature reached normal and the white blood count dropped to 10,500. After the acute symptoms had disappeared a sigmoidoscopic examination was done which showed a pale mucosa and no open lesions. Considerable spasm was encountered while introducing the scope. An x-ray of the colon at this time was normal except for moderate spasm. When the patient returned home he continued a bland diet and mineral oil by mouth, and although he improved some he failed to make a complete recovery. Seven months later he was admitted to the hospital again for additional examinations. The routine tests, including blood, urine and Wassermann, were all normal. The x-ray studies of the stomach and duodenum were normal. The x-ray of the colon was repeated and this time

numerous diverticula were found. This case of diverticulitis is not especially unusual, but it does illustrate how diverticula when acutely inflamed and swollen will fail to show on roentgen examination, but will be evident later, after the acute condition has subsided.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

SYNCOPE FROM CAROTID SINUS REFLEX ACCOMPANIED BY BRADYCARDIA AND POSTURAL HYPOTENSION*

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Syncope from carotid sinus reflex has been described by Weiss and Baker¹ and others.^{2, 3 and 4} No etiologic cause for this phenomenon was found until Hering,⁵ in 1923 demonstrated that the dilated portion of the bifurcating common carotid artery (carotid sinus) was richly supplied with sensory receptors. Weiss and his co-workers⁶ have ably discussed both the physiology and the symptomatology of this reflex. None of the cases reported by these workers had either a bradycardia or a postural hypotension.

Our patient entered the University Hospital February 4, 1937, because of weakness, fatigue, and recurring attacks of dizziness. As early as 1928 he had experienced shortness of breath on exertion, but had never noticed any precordial pain or epigastric distress. About two years before his admission to the hospital he had had his first attack of dizziness. While at rest, he suddenly became "light headed" and noticed a tickling sensation in the episternal notch. Within a few minutes he became short of breath and soon had actual hyperpnea. The episode subsided within a short time and he was able to go about his work. Following this experience the short-

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ness of breath on exertion became more marked. During the two year period he had about twelve attacks of dizziness, some of which were rather severe but at no time did he lose consciousness. When the dizziness was marked, his heart would skip a few beats and he would have twitching of the arms. The syncope never occurred while he was lying down and during the incident he preferred to rest in a supine position rather than a sitting one. For the past forty years his heart rate had been slow but no one ever counted his pulse when the dizziness was present. He volunteered the information that he was unable to wear a tight collar because of the sense of choking, but this statement was at first overlooked. There was no history of abdominal distress, excessive hunger, or sweating.

The patient was a well developed, fairly well nourished white male, sixty-six years of age. The hair was thin but of normal distribution. The hearing was diminished, more so on the right than the left. A marked bilateral arcus senilis was present but the eyes reacted normally to light and accommodation, and the ocular fields and ocular movements were well within the range of normal. Examination with the ophthalmoscope revealed an incipient cataract on the left, while both fundi showed the evidence of moderate retinal sclerosis. The nasal passages were reported by the otolaryngologist to be free from disease. An early atrophy of the papillae of the tongue was present. The musculature on the left side of the neck was atrophied but caused no stiffness or limitation of motion. In the lower dorsal region there was a scoliosis to the left causing one-half of the chest to appear larger than normal. The lower costal margins moved laterally and no differences in the expansion of either half of the chest could be noted. On percussion a hyperresonance was found but the breath sounds were normal and no adventitious sounds were heard. The vital capacity was normal for a man his age and size. On percussion in the upright position the left border of the heart was found just outside of the mid-clavicular line. The aorta was neither accessible nor widened by palpation or percussion. The cardiac sounds were of good quality and normal rhythm, but occasionally a premature beat interrupted the normal cycle. No endocardial murmurs were heard and neither the second aortic nor second pulmonic sounds were accentuated. The cardiac apical rate was 54 per minute. The brachial vessels were seen to be tortuous, could be easily rolled under the fingers and felt thickened.

Manometric readings of the arterial blood pressures taken at various times were as follows:

Lying	102/60 to 160/80
Sitting	98/60 to 132/74
Standing	70/54 to 108/68

A well healed scar was seen over McBurney's point. On palpating the abdomen the liver edge was felt to descend two centimeters below the costal margin on deep inspiration, but the spleen was not felt. The left testicle was atrophic, although the genitalia were not otherwise remarkable. The rectal sphincter was of fair tone and the prostate gland, while slightly enlarged, was neither nodular nor tender. Anoscopic examination revealed a rosette of hemorrhoids about the internal sphincter; however, no points of bleeding were seen. The pulsation of the dorsalis pedis arteries in both feet could be felt, although it was not as pronounced as that in the anterior tibials. A complete neurologic examination elicited no abnormalities. Chemically and microscopically the urine was normal on all examinations. The blood cell count gave the following results: 3,200,000 erythrocytes per cubic millimeter, 5,000 leukocytes per cubic millimeter with a normal differential count. Hemoglobin content was thirteen grams per 100 cubic centimeters. The blood smear showed evidence of hypochromic anemia. The various laboratory tests for syphilis were negative. The basal metabolic rate was plus nine. Repeated stool examinations revealed only a trace of occult blood. Chemical analysis of the blood resulted in a normal nonprotein nitrogen content. An electrocardiogram showed no axis deviation, a normal mechanism, a cardiac rate of 40, and a few premature beats from the auricles. There were no changes in the T waves or RST segments suggestive of coronary artery disease. Roentgenograms of the chest were normal; those of the spine showed a fusion of the fifth and sixth cervical vertebrae and a scoliosis in the lumbar region. The cardiac silhouette on the teleroentgenogram was within normal limits.

After a few days of hospitalization the patient suddenly developed an attack of hyperpnea and had two generalized convulsions with clonic spasms of the extremities. The convulsions lasted only a minute and the entire episode was over in about four minutes. During the attack there was no cyanosis, the pupils were not dilated, marked lacrimation was present and the blood sugar was 147 milligrams per cent. Unfortunately the cardiac rate was not obtained. After recovery

the patient complained of weakness, but was able to be up and about the ward.

Since the blood sugar determination ruled out hypoglycemia, an attempt was made to reproduce these spells of syncope by pressure over the carotid sinus. It was found that these attacks could be brought on by light pressure over both sinuses only. Deep pressure even to the point of occluding the carotids, both singly or together, caused no syncope, if the pressure was above or below the sinus. Light pressure on the carotid sinus caused a pallor of the face, followed by flushing, increased depth of respirations and finally unconsciousness. At this point the patient would assume an opisthotonos position and have a generalized convulsion with clonic spasms. Within a half minute the attack would end and the only apparent residual effect was a marked lacrimation. During two of these induced spells, cardiac standstill was noted but we were unable to obtain an electrocardiographic tracing of this phenomenon. The pulse rate usually was unchanged or slightly faster than normal.

Benzedrine sulphate was administered in doses of ten milligrams five times a day with no untoward effects. No changes were noted in the heart rate or arterial blood pressure but there was marked subjective improvement of his weakness and tiredness. The patient was discharged from the hospital and told to continue the benzedrine sulphate. Two months later he was again examined and the cardiac rate was found to vary from 88 to 94. There had been no spontaneous attacks during the period and he was able to do more work. Pressure over the carotid sinuses still reproduced syncope. The cardiac findings were changed and the arterial blood pressure still showed a postural hypotension: the manometric readings were unchanged. Repeated electrocardiographs showed no changes in rhythm, T waves or RST segments.

This case is interesting because of the fact that the carotid sinus reflex was accompanied by a bradycardia and postural hypotension. Apparently the bradycardia and hypotension played no rôle in the production of the syncope. Since cardiac asystole (standstill) was produced only twice, the cerebral type of carotid sinus reflex must have been predominant in this patient.

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THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

SPONTANEOUS RUPTURE OF THE AORTA

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In recent years spontaneous rupture of the aorta has been recognized as a not infrequent cause of sudden and often instantaneous death. In our series of 500 necropsies there have been five patients with partial or complete rupture of the aorta. Two had rupture of the intima which resulted in dissecting aneurysms: one case was an example of a ruptured abdominal aneurysm; one was due to an automobile accident. The case to be presented is one of complete and apparently spontaneous rupture of the ascending aorta.

CASE REPORT

The patient, a railroad division engineer, fifty-eight years of age, was admitted to the Finley Hospital at 3:30 p. m., February 6, 1938, with a complaint of "severe pain about the breast, sudden extreme weakness and collapse."

Family History: His wife and six daughters were living and well, as were his father and mother.

Past History: The patient had never been seriously ill and denied venereal disease, rheumatism or other illnesses of adult life. On December 29, 1937, he had had an annual health examination incident to his work with the following report. The blood pressure of the left arm was 150/80, of the right 180/96. The left border of the heart was two centimeters to the left of the mid-clavicular line. The rate and rhythm were normal and no murmurs were heard. At rest the pulse was 70, after exercise 84, and two minutes later 74. The radial artery felt moderately thickened, due to arteriosclerosis. The head was negative. The pupils were equal in size and reacted normally to light and accommodation. The nose was negative. The tonsils were absent and the fossae were clear. The thyroid gland and cervical lymph nodes were not palpable. The lungs were clear to percussion and auscultation. The abdomen was

negative. The external genitalia were negative. The prostate gland was not enlarged. The patellar reflexes were normal. An electrocardiogram showed a ventricular rate of 70; intervals: PR 16, QRS .04, rhythm regular. The interpretation was a negative T wave in Lead III, left axis deviation, slightly irregular voltage.

X-ray examinations of the teeth, right jaw and chest were reported as follows. The upper left first molar, the lower left second bicuspid, and second and third molars showed caries. The lower right second bicuspid showed caries and



Fig. 1. Photograph of the heart showing slit-like rupture of the aorta.

apical infection. There was moderately advanced alveolar absorption and partially worn down crowns of all teeth. No evidence of pathology could be outlined in the right mandible. The lung fields showed moderate peribronchial infiltration. The arch of the aorta was prominent and the auricles and ventricles were proportional. The cardiac configuration conformed to a thorax of this type. A urinalysis was negative. A blood examination was reported as follows: red blood count, 3,720,000; white blood count, 7,200; hemo-

globin, 79 per cent; color index, one. The differential count was small lymphocytes, 38; large lymphocytes, two; polymorphonuclears, 57; and eosinophils, three. There was slight achromia. The examiner suggested further studies to rule out primary anemia and further study of the arch of the aorta, but this was not done. The patient weighed 158 pounds but had lost eight pounds in the previous two years.

Present Illness: Following unusual exertion over a period of thirty-six hours while directing repair work on the railroad following a flood, the patient was taken with a sudden, severe pain in the cardiac region and immediately collapsed. A Galena physician was called and he kept the patient at absolute rest for two hours and then brought him to the hospital. On admission the principal complaint was severe oppressing pain in the cardiac region and extreme weakness.

Physical Examination: The patient was a well developed and fairly well nourished white man who appeared extremely ill and in shock. The face was very pale and had an anxious appearance. He was conscious and answered questions readily. The general examination of the head, eyes, ears, nose and throat was negative except as noted above. The veins of the neck were prominent and the pulsations were increased. There were many râles in the posterior portion of each lung. The heart dulness was increased in all directions and the heart sounds were faint and indistinct. No unusual sounds were made out. The blood pressure was 115/80. Aside from slight abdominal distention the remainder of the examination was negative.

Course in Hospital: There was little change for about one and one-half hours, but the patient then went into severe collapse and death appeared imminent. After cardiac stimulation and artificial respiration he recovered somewhat but had attacks when the pulse became very weak or imperceptible and the patient became very cyanotic. He died approximately six hours after the initial attack.

Clinical Diagnosis: Undetermined.

Necropsy Abstract: Externally the body was unremarkable. On examining the heart 400 centimeters of clotted blood and sanguineous fluid were found in the pericardial sac. The source of the hemorrhage seemed to be about the root of the aorta. On opening the latter, a knife-like slit, 2.5 centimeters long and at right angles to the long axis, was found approximately three centimeters above the aortic cusps. This extended through all coats of the vessel (Fig. 1). The aorta showed slight atheromatous changes. Two of the aortic cusps were adherent and partly calci-

fied, but no active lesion was noted. The heart was estimated to weigh 460 grams. The coronary arteries were patent and showed only the early changes of arteriosclerosis. The other conditions found were acute congestion and edema of each lung, fibrous pleurisy on the right and a few retention cysts of the kidneys. Routine microscopic examinations of the aorta in the vicinity of the rupture showed moderate arteriosclerosis of the intima and hyalinization of the media.

DISCUSSION

The incidence of rupture of the aorta, independent of aneurysmal sacs, is not known. While not common it is probably more frequent than we suspect. According to Arenberg¹, four or five cases are seen every year at the Erdheim's Pathological Institute at the City Hospital in Vienna, where between 2,500 and 3,000 necropsies are done each year. He also states that Ames and Townsend, as well as Oppenheim, estimate that spontaneous rupture of the aorta occurs once in 500 necropsies.

The lesion falls into three groups², "In the first there is complete rupture of all coats at once, the tear in the outer coat corresponding to that of the inner coat. The interior may be smooth and the lesion is usually rather sharp, as if cut by a knife. In the second group the inner coat ruptures sometimes before the outer which usually gives way at one end or the other of the inner tear or at a little distance from it, there being no infiltration between the coats. The tear in the outer coat is usually at right angles to that in the inner coat. In the third group the rupture occurs as in the second, but there is infiltration of blood, sometimes extensive, between the coats. In this group fall all cases of dissecting aneurysm of the aorta. To the first group belong about 65 per cent of all cases, to the second about 20 per cent and to the third about 15 per cent."

While many of the early reports indicated that "spontaneous" rupture had occurred in normal aortas, considerable doubt has arisen as to whether this is possible. The consensus at the present time seems to be that the rupture had been preceded by some pathologic condition in the aorta. Klotz and Simpson³ made a special study of rupture of the aorta in individuals under forty years of age. They did this in order to eliminate all changes in the aortas of older individuals. They also excluded all cases with demonstrable extraneous causes of the rupture. In each of their series of five cases they were able to demonstrate a peculiar degeneration (necrosis) of the media. These necroses, which were patchy or diffuse, usually occupied a zone between the middle and outer

third of the media, but at times extended inwardly or outwardly into the neighboring zones. This peculiar degeneration of the media has also been described by Erdheim, Gsell and others.

The etiology is unknown but dietary deficiencies, bacterial toxins or the toxins of metabolism have all been suggested as possible causes of the medial necrosis. In his paper Klotz was of the opinion that it is the result of more than one factor, but points out the need for a thorough study of the degenerative lesions of the media.

SUMMARY

A case of sudden death following an attack of cardiac pain with collapse has been described. At necropsy a complete rupture of the ascending aorta with pericardial hemorrhage, so-called spontaneous rupture, was found to be the cause. The literature has been briefly reviewed.

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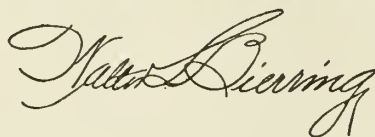
INTERNATIONAL MEDICAL ASSEMBLY

The Twenty-third International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the public auditorium of Philadelphia, Pennsylvania, October 31 to November 4, 1938. All scientific and clinical sessions will take place in the auditorium. Hotel headquarters will be the Benjamin Franklin Hotel.

The members of the medical profession of Philadelphia are correlating for the clinics an abundance of hospital material representing various types of pathologic conditions which will be discussed by the contributors to the program. In the neighborhood of eighty distinguished teachers and clinicians will appear on the program, a tentative list of which may be found on page xxvi of the advertising section of this JOURNAL. The subjects and speakers have been selected to consider practically all the subjects of greatest interest to the medical profession in general. Pre-assembly and post-assembly clinics will be held in the Philadelphia hospitals on Saturday, October 29, and Saturday, November 5. It is very important that you make your hotel reservations early by writing Mr. Thomas E. Willis, Chairman of the Hotel Committee, Chamber of Commerce Building, 12th and Walnut Streets, Philadelphia, Pennsylvania.

The Association, through its officers and members of the program committee, extend a very hearty invitation to all members of the profession in good standing in the Iowa State Medical Society to attend the Assembly. The registration fee is \$5. Officers are: Dr. Elliott P. Joslin, President, Boston, Massachusetts; Dr. George W. Crile, Chairman Program Committee, Cleveland, Ohio; and Dr. William B. Peck, Managing Director, Freeport, Illinois.

STATE DEPARTMENT OF HEALTH



Pneumonia Control in Iowa

I. DISTRIBUTION OF DIAGNOSTIC ANTIPNEUMOCOCCIC SERUM

A. Pneumonia Typing Stations.

1. During the months of 1938, the Iowa State Department of Health has supplied diagnostic antipneumococcic serum for use in the type determination of pneumonia by the Neufeld method, to more than one hundred hospitals, laboratories and physicians in sixty counties of the state. The January number of the *JOURNAL* (pages 17 and 18) contains a list, arranged alphabetically by counties, of pneumonia typing stations in Iowa.

2. The State Department of Health will entertain requests from physicians representing hospitals that do not now serve as typing stations, so that such hospitals may be added to the list of laboratories in which the Neufeld technic is carried out.

B. Diagnostic Serum.

1. The Iowa State Department of Health furnishes on request and without cost, diagnostic serum for pneumonia of Types I to VIII, inclusive. According to data relative to 6,546 pneumonia cases assembled by Plummer and published in a splendid article in the August 20 issue of the *Journal of the American Medical Association*, page 694, the first eight represent 75 per cent of the thirty types comprising the total number of cases of pneumococcic pneumonia. Diagnostic serum to replenish the supply, will be forwarded promptly, on request, to the various typing stations.

2. The Department will supply diagnostic antipneumococcic serum for Types IX to XXXII inclusive, on request, to hospitals and laboratories that do not now include this item of expense on their budget.

C. Neufeld Testing.

1. The Department's State Hygienic Laboratory at Iowa City, will forward on request, killed

pneumococcus culture material for the use of laboratory technicians and physicians in the study of the Neufeld method.

2. The State Hygienic Laboratory (Iowa City) is prepared to perform the Neufeld test on sputum or other specimens when forwarded to the laboratory from pneumonia patients.

II. DISTRIBUTION OF CURATIVE PNEUMONIA SERUM

The use of pneumonia serum, administered early and in adequate amount, represents an important link in the chain of pneumonia control measures. The State Department of Health desires to cooperate with attending physicians, pharmacists and hospital officials, so that pneumonia serum may be made available in expeditious manner and without delay. In view of the expense involved in keeping an adequate stock of serum for the various types of pneumonia, it will be appreciated that the number of pharmacists who handle this serum must necessarily be limited.

A. Conditions Under which Pneumonia Serum is Furnished. The State Department of Health agrees to help with distribution and to pay the cost of pneumonia serum under the following conditions:

1. That the attending physician report the pneumonia case directly to the State Department of Health, by telephone or telegraph, stating the patient's age, day of onset of illness and amount of serum desired.

2. That the case of pneumonia be specified as to type, after accurate determination by the Neufeld method.

3. That the name of the biological company be mentioned, serum of which is to be used.

4. That the attending physician investigate and determine whether the economic status of the patient and of relatives is such as to render desirable the furnishing of an adequate amount of

pneumonia serum through a central health agency such as the Iowa State Department of Health.

B. Methods of Serum Distribution.

1. In order that curative serum may be supplied with the least possible delay, the State Department of Health agrees when the case is reported, to arrange for serum to be furnished by a pharmacist-distributor in or near the locality in which the pneumonia case occurs. The pharmacist after supplying pneumonia serum is requested to make out an invoice in triplicate, one copy to be forwarded to Walter L. Bierring, M.D., Commissioner, State Department of Health, Des Moines, one copy to be mailed to the biological company and the third to be kept on file by the pharmacist. The invoice should include the following items: the amount of serum, (number of units), type of serum, name and address of patient, name and address of physician, cost price of serum, and name of the biological company.

2. Should serum in adequate amount and of desired type be unobtainable locally, such serum will be forwarded as promptly as possible from the State Department of Health.

C. Amount of Serum for Locality. Because funds available for serum distribution are limited, it may become necessary to prorate such funds to various counties or localities, on the basis of population.

D. Physician's Case Record. In connection with the reporting of cases of pneumonia, the Department forwards a letter and pneumonia case record form to the attending physician, so that accurate information may be gathered relative to reported cases of pneumonia and results following the use of type specific antipneumococcic serum.

E. Reporting of Pneumonia. Pneumonia is one of the communicable diseases listed as reportable in Rules and Regulations of the State Department of Health. Attending physicians and hospitals are asked to report cases of pneumonia with mention of the type of pneumococcus as determined by the Neufeld test, to the local health officer or local board of health. In counties organized on a district or countywide basis, cases are reported to the district or county health office. All cases are reportable in turn, to the State Department of Health.

F. Telephone Numbers for Obtaining Serum. Physicians desiring antipneumococcic serum through the State Department of Health, may obtain the same by telegram (specify type of pneumonia and age of patient) or by telephone. A station to station call may be placed by calling the State House number, 4-9111, and asking for Ex-

tension 137. After five o'clock on week days, on Saturday afternoons or Sundays, Des Moines telephone numbers are 7-1417 and 6-1696.

MORE SPOTTED FEVER

The fifth case of Rocky Mountain spotted fever to be reported thus far this year and the second of the season from Boone county, was reported to the State Department of Health, August 2, 1938. In the absence from the city of the attending physician, M. A. Healy, M.D., of Boone, the case was reported by E. M. Myers, M.D., President of the State Board of Health.

P. E. M., a nine year old boy, resident of the city of Boone, became ill July 20, complaining of dizziness. On the second day, and for several days thereafter, the patient vomited and had headache. Other symptoms and signs included fever (to 104.8 degrees), neck stiffness, aching and tenderness of arms, legs, and of the entire body. The patient was very drowsy but at no time irrational. On the second day of illness, small reddish macules appeared on the lower legs, somewhat later they appeared on the forearms, and then on the face. Several days later, the rash was generalized, macules being discrete, small and of a deeper color with a rise in temperature. Macules, pale brown in color, were still clearly discernible on August 3, at which time the patient was convalescing.

The history revealed the fact that while the patient was fishing near Boone on July 17, a tick, firmly attached but not engorged, was removed from the back of the patient's neck. This occurred three days before onset of illness.

The clinical diagnosis of spotted fever was confirmed on August 4, 1938, when the State Hygienic Laboratory reported a positive agglutination test (Weil-Felix reaction) in the 1:640 dilution.

Three Cases Notified to Adjoining States.

Three cases of spotted fever, two affecting members of the same rural household in Illinois and the third, a resident of Missouri, were recognized and brought to the attention of the State Department of Health during the month of August, by Iowa physicians. The Illinois cases were reported by W. W. Daut, M.D., and C. P. Phillips, M.D., of Muscatine. The Missouri case was discovered by J. R. Rankin, M.D., of Keokuk, who previously reported a case of spotted fever from Lee county in 1934. These cases, confirmed by positive laboratory findings, were notified on Interstate Reciprocal report forms, to the respective state departments of health.

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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*Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines*

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII SEPTEMBER, 1938 No. 9

WHAT NEXT?

The federal government, having fired both barrels of its trial field pieces in the general direction of American medicine, (the Thurman Arnold anti-trust suit and the National Health Conference), now presumably waits to observe the effects of its marksmanship before releasing further broadsides. Something of the public's reaction may be gathered from comments which have appeared in newspaper and magazine stories and in editorials. It is a safe assumption that practically every newspaper and news magazine in the country has had something to say in the matter; and let there be no mistake, the American system of medical practice is on trial!

The majority of the press clippings which have come to our notice are unfavorably critical of Mr. Arnold's attempts to bring the medical profession within the scope of the Sherman Anti-trust laws. If the principles of ethics which have long been in force for the guidance of members of the American Medical Association, and ultimately for protecting the best interests of the public, are to be construed as acts of conspiracy in restraint of trade, what is one to think of the rules governing the various labor unions whose fights to force majority vote as binding on the whole union have been fostered and defended by the administration? Obviously consistency is not one of the virtues of politics. The best case that can be made out of Mr. Arnold's suit, and one which many newspaper writers recognize, is that the Group Health Association's cooperative venture should be permitted to continue on the basis of its being an experiment. This point of view has appeal for the layman; it has none for the physician, for he is already familiar with the political intrigue and economic waste inherent in such schemes.

The consensus of the press on Mr. Arnold's action may be summarized, we believe, under two headings: first, that the Department of Justice has assumed the rôle of prosecutor in the charge it has brought against the District of Columbia medical society and the American Medical Association; and second, that although indictment under anti-trust laws is hardly to be expected, nevertheless the medical profession must not be too dogmatic in opposing cooperative ventures which seek to provide new methods in purchasing medical service. The *Boston Herald*, on August 2, states it thus: "If these ventures will inevitably lower the quality of medical care and the American Medical Association can demonstrate that certainty, it is on strong ground. Plainly we must not embark on any scheme which will impair existing medical standards; but if the A.M.A.'s objective is merely to freeze our present medical facilities into a state of permanence and to prevent the free and honest trial of new facilities, it is on exceedingly weak ground." In all probability Mr. Arnold's suit will come to trial within the next few weeks. Upon its outcome hinges the future course of medical practice. It is to be hoped that the principles of medical ethics will still have some meaning when the judicial decision has been rendered.

What now of the public's reaction to the proposals as put forth at the National Health Conference? In order to have those recommendations fresh in mind, let us again record them:

1. Compulsory sickness insurance with federal subsidy at an estimated over-all cost of \$2,600,000,000 a year.

2. Expansion of general public health services, requiring an additional annual expenditure of \$200,000,000.

3. Expansion of maternal and child health services requiring an additional annual expenditure of \$165,000,000.

4. A hospital construction and partial maintenance program to construct 360,000 beds and 500 health and diagnostic centers requiring annual appropriation of \$146,000,000.

5. Expansion of facilities for medical care of the medically needy to reach an annual appropriation of \$400,000,000.

It cannot be denied that there is a growing sentiment in the minds of the American people that some change in the present method of paying for medical service is very much needed for those citizens who are classed in the low income group. Many comments are favorable to a trial of the insurance principle, either voluntary or compulsory. It is readily agreed that the proposals above are far-reaching in the direction of socialization

of medicine; and yet the opinion is expressed that we are on our way whether the doctors approve or not. With this latter viewpoint we are inclined to agree. There can be little doubt that it has been the intent from the start to include medical service in the social security program set up by the administration. The various governmental surveys leading up to and including the National Health Conference have been but the propaganda build-up preparatory to legislative enactment. With the reconvening of Congress in the winter, certain measures will undoubtedly be introduced looking to the carrying out of the National Health Conference recommendations. It seems obvious that the group at Washington is not particularly interested in finding the most economical and effective method of adjusting medical service to the new social and economic order which has arisen within the short space of a decade as the result of an unprecedented economic upheaval. Else, surely, the American Medical Association, with its vast accumulation of information and with its corps of experts who have spent years in studying the problem, would have been called in consultation.

There is no question but what organized medicine could and should assume the responsibility of modifying its policy on the delivery of medical service to meet the changing needs of the American people, and yet preserve those principles which have given to this country a system of medical practice superior to any other in the world. Those who feel that a national health insurance program is the answer for the problem are directed to a recent article* which presents interesting figures in connection with such a plan to come into operation in Australia in January, 1939. Briefly and logically, this report brings out the fact that over 80 per cent of the population will be brought under this scheme; that five per cent of the remainder are unemployed; and therefore, that only fifteen per cent of the people will receive medical treatment as private patients. The writer of this article furthermore estimates, and sets forth undeniable figures to substantiate his findings, that it would be practically impossible for any practitioner to receive a net income exceeding six hundred pounds, or approximately three thousand dollars, per annum. Such a regime and so low an income would provide no time and little money for graduate study which is the lifeblood of a competent and effective medical service. Is this the type of medical service we want in the United States? We must remember that the American people have entrusted their welfare to the medical

profession, and we would be sadly remiss in our responsibilities if we failed to warn them of the dangers to themselves in such ineffective and misleading plans. It is difficult to know who would be benefited by the adoption of any such scheme in this country; not the medical profession, and certainly not the American people. The only remaining class would be that group under whose supervision the activities would be carried out, and the public is only too familiar with the tremendous costs of such administrative bureaus.

Whether or not the administration can be prevailed upon to delay its program until the American Medical Association shall have had time to complete the survey of medical care, now under way, and to make counter-proposals for meeting the needs of the medically indigent classes, is impossible to say. One thing seems certain, and that is that the situation calls for the most prompt and decisive action yet undertaken by organized medicine, if any semblance of medical practice, as it has been enjoyed in the past, is to continue.

CONTACT INFECTIONS

A year ago, the American Academy of Pediatrics appointed a Committee on Contact Infections. Recently the Committee submitted a report which, in our opinion, merits the serious consideration of the medical profession of Iowa and of the Department of Health. The gist of the report is to the effect that a great deal of illness could be prevented, particularly among children, if a program of periodic health examinations for the adult associates of children was to be inaugurated. Parents, relatives, domestic servants and teachers comprise the group most frequently in contact with children. An unrecognized communicable disease in such persons is always a potential source of infection. It is common knowledge that such diseases as tuberculosis, gonorrhea, syphilis, respiratory infections, skin diseases, such as scabies, and typhoid fever from carriers are not infrequently transmitted from adults to children. The Committee feels that of all the diseases, tuberculosis is the most important and the most dangerous. It is now well established that an open case of tuberculosis in a home can infect every child in that home. Furthermore, it has been established that an x-ray plate is the most efficient means available for detecting the presence of pulmonary tuberculosis; hence an x-ray of the chest is a prerequisite in the health examinations of adults for the protection of children.

The report goes on to state that health references should be as frequently asked for and furnished by servants engaged to come into homes

*Foreign Letters: National health insurance. *Jour. Am. Med. Assn.*, cxi:733-734 (August 20) 1938.

where there are children, as are character references. The truth of such a contention has long been recognized in medical circles, but many obstacles have been encountered in getting such a program under way. Servants as a class are inclined to resent being asked to have a physical examination. The Committee believes this attitude could be dissipated to a large extent if employers set an example by themselves having health examinations.

The keynote of success, as in most campaigns, centers about intensive educational efforts and co-operation of the many interested groups. In Westchester County, New York, the interest of a number of organizations, including the Metropolitan Life Insurance Company, has been secured, and early experiences have been very encouraging. The local medical society has cooperated, and through its Public Health Committee, has arranged a standardized form for this type of examination. Included in the examination is an x-ray of the chest and a blood Wassermann test. In Knoxville, Tennessee; Newark, New Jersey; North Carolina and in other parts of the South, serious attention is being given to the possibilities inherent in the plan.

The JOURNAL believes the time has arrived when health agencies should enter into an intensive campaign to teach the lay public the fundamental facts involved in the spread of communicable infections. Certainly it is inconsistent with our modern knowledge of bacteria, for health departments to release messages, (usually copied by the press), that the way to avoid summer colds is to refrain from over-eating, to stay out of drafts, to keep out of the breeze of a fan, to refrain from too much drinking and smoking, et cetera, without one word of caution being said as to the true source of the infection, which is some other person with a summer cold. Let us at least have the emphasis placed upon the primary cause, and relegate to their secondary place of minor importance, such things as appear in the health messages previously mentioned. Long ago the tuberculosis workers achieved success in their publicity campaign by adopting such a slogan as "one case breeds another." Few lay people exist today who do not understand the danger of contact with a consumptive individual. Similarly, it is our firm belief that much progress could be made in the prophylaxis of acute infections of the respiratory tract if adequate publicity could be given to the simple truth that "one cold or one sore throat leads to another." In fact, it can also be said that by far the greater proportion of cases of diarrhea

and dysentery encountered in the summer months are on the etiologic basis of parenteral infections spread from person to person, rather than on the basis of dietary indiscretions.

The adoption of the type of program suggested by the Committee on Contact Infections, would provide an opportunity for focusing the attention of the public upon the fundamental factors of importance in the spread, not only of such communicable diseases as tuberculosis, gonorrhea and syphilis, but many others, less obvious, perhaps, but nonetheless communicable to an even greater degree. When the time comes that parents and teachers alike will cooperate in keeping at home every child suffering an infection of the respiratory tract, we shall have gone a long way on the road to control of illnesses of this character.

The recommendations of the Committee are well worth calling to the attention of our readers:

1. Acquaint the members of the Academy with the advisability of recommending a thorough periodic physical examination to all adults in close contact with children.

2. Attempt to influence parents to have periodic examinations themselves, for the protection of their children and as an example to their employees.

3. Ask pediatricians also, to have physical examinations in order to set a proper example and to create the impression that they believe in what they advise.

4. Encourage the x-ray examination of the lungs of teachers and other school employees.

5. Take steps to initiate a campaign for the education of the public regarding the need for, and value of such examinations. Develop public opinion to the point where it becomes customary for domestic workers to hold medical cards as a "health reference" as the result of having undergone the necessary physical examination.

6. Get the cooperation of employment agencies to encourage domestics, who work in families with children, to obtain "health cards."

7. Enlist the assistance of "child health minded" organizations, in as many communities as possible throughout the country, to carry out this campaign.

8. Secure the cooperation of local and county medical societies throughout the country to adopt a standardized examination which will detect evidence of communicable disease. (An x-ray of the lungs is requisite.) The charge for these examinations must be sufficiently low as to be within the ability to pay, of all who need them.

THE FOOD, DRUG AND COSMETIC ACT OF 1938

After five years of more or less heated discussion, the new Food, Drug and Cosmetic Act was finally signed by the President on June 25, 1938. While the act in its entirety will not become effective until June 25, 1939, certain provisions went into effect immediately. It must be admitted that the new law does not have the "teeth" which its originator, the late Senator Royal S. Copeland, had hoped it would possess. Nevertheless, the revised act is a distinct step forward in governmental protection of the health and welfare of the American people.

Provisions immediately effective include the prohibition against the introduction of new drugs before they have been adequately tested, the prohibition against drugs which are dangerous to the consumer when used as prescribed on the label; and the prohibition against cosmetics which may be injurious to users. Correctly executed, these provisions should prevent recurrences of such tragedies as the more than one hundred deaths from the sale and use of elixir of sulfanilamide last winter, the blindness and deaths from the use of "Lash-Lure" during the past two years, and the health of innumerable women being ruined from the use of "slenderizing" preparations throughout the past decade.

Secretary of Agriculture Henry A. Wallace has this to say of the revised act, "I realize that, as with any new law, the final effect of judicial interpretation cannot be foretold. I am assigning enforcement of the law to the Department's Food and Drug Administration. Its experience through thirty-two years of food and drug law enforcement and the enthusiasm of its officers for public protection will guarantee as effective administration of the new law as can possibly be accomplished with the facilities available."

Generally speaking, the old law contained few positive requirements for labeling; the new law requires much information on the labels of packages containing drugs, foods and cosmetics, but the consumer must intelligently interpret this information if he is to receive the maximum protection from this legislation. In the case of drugs, this consumer is often the doctor, and we feel that every physician and pharmacist should and will become fully acquainted with those provisions of the new act which specifically apply to drugs and pharmaceutical preparations. The medical profession, whose duty it is to protect the health of the people, has received renewed support from this measure. We must use it intelligently and effectively.

ANTHRACCTHERAPY

The increasing number of articles in the literature on the intravenous use of charcoal in the treatment of infection calls for a few remarks on this unusual type of therapy. The preparation employed is a two per cent aqueous suspension of animal charcoal. The carbon must be absolutely and chemically pure and the particles must be divided to a diameter of 0.002 to 0.005 millimeter. The suspension must then be perfectly sterilized. It is injected intravenously in doses of 3.0 to 6.0 cubic centimeters daily.

The results of the intravenous injection of charcoal on the organism are outlined by Eugene St. Jacques in *International Clinics*, Volume II, New Series One, and consist of an increase in the polymorphonuclear leukocytes in six to ten hours after injection, an increase in the opsonic index, the neutralization of toxins by the carbon particles, a stimulation of the cells of the reticulo-endothelial system, and probably an increase in the alkalinity of the blood. The carbon particles disappear rapidly from the blood stream and are found lodged in the cells of the lungs, of the spleen and liver, and to a lesser extent, in the bone marrow and kidneys, where endothelial cells appear to absorb the foreign material. Microscopic sections show no evidence of inflammatory reaction at the site of absorption.

According to St. Jacques the intravenous injection of charcoal is an absolutely harmless procedure which produces no local or general reactions, such as fever, chills, or headache. He has employed this method of treatment in 400 cases of acute infections and has given more than 1,000 injections without serious reaction. In 50 per cent of the cases, the temperature fell to normal in forty-eight hours, and the patients were cured; in 30 per cent the temperature reached normal in five to seven days and the patients recovered; and in 20 per cent the results were classified as doubtful because other methods of treatment were employed.

The treatment has been employed in a wide variety of acute infectious processes—furunculosis, carbuncle, erysipelas, lymphangitis, gonococcal infections, peritonitis, puerperal infections, pneumonia, etc. In the reported cases one is impressed with the emphasis on cures and the absence of reported failures. This method may prove to be a very useful addition to our therapeutic armamentarium, but it must be emphasized that until it is given a thorough and extensive clinical trial, under adequately controlled conditions, one is unable to evaluate correctly its usefulness in the therapy of acute infections.

Conditions for Testing Therapeutic Methods in Schizophrenia*

ANDREW H. WOODS, M.D., Iowa City

Physicians and the general public are growing uneasy because of what appears to be a steady increase in the incidence of this disease. One-half of the patients in our mental hospitals are schizophrenic individuals. The increasing number of commitments under this diagnosis must, however, be viewed with some reservations, because growing interest in it makes physicians and families more alert to it, and brings more patients to the hospitals. Furthermore, the basis of diagnosis is not sufficiently established and is not uniform throughout the world. The correct statement as to numbers may, therefore, be higher or lower than is now reported.

Schizophrenia is marked by grave changes throughout the whole extent of the personality and intelligence. It is most common during the ten years following adolescence, and comes most often in persons who have been retiring, shy, lacking in self-confidence and habitually over-absorbed in their own feelings and ideas. It results in a gradual intensification of these characteristics until the minds of the persons affected become almost totally unresponsive to the actual environment, but continue to respond to memories and ideas within the mind itself, until after a long or short period, complete dementia results.

The behavior of those patients is, therefore, more or less completely inappropriate for the actual situations which arise in their lives. Some are totally unresponsive to anything. They appear to have no ideas and to be lacking in interest in what goes on around them (simple schizophrenia). Others keep responding ineffectually to real perceptions and chiefly to ideas within themselves. They, accordingly, exhibit inexplicable facial expressions, gestures, or bodily postures, and talk illogically and disconnectedly on the basis of fragmentary memories and thoughts which are irrelevant to their actual surroundings (hebephrenia). The persistent timidity and lack of self-confidence in still other patients lead them to talk about plots, slights and injustices (paranoid). A fourth subclass is marked by even greater alienation from the real world, the irrelevant ideas often producing sudden outbreaks of violence. Often after a period of violent action there follows a stuporous stage, which may be attended by waxy tonicity of the muscles (catatonia).

An insidious disease, which disrupts the whole range of personality, naturally arouses the families involved and, through them, the general public, to eagerness and hopefulness, if any means of treating these patients is mentioned in the newspapers or journals. Recently the camphor, and later the metrazol treatment, suggested by Meduna, have been much discussed. Severe epileptiform convulsions are produced, after which, the reports state, a considerable portion of the patients are improved. Sakel's treatment by insulin for a year or two has aroused attention in Europe and America. In the Iowa State Psychopathic Hospital this treatment has been carried out in a number of cases, not with any thought that the small number available for experimentation there would give significant statistical results, but rather to satisfy ourselves as to what the necessary experimental conditions must be when one seeks to evaluate this or any other form of treatment of this disorder.

The following four conditions emerge, each of which is essential to a just evaluation of any proposed method of treatment of schizophrenia.

1. *Diagnostic criteria.* Since there is no absolute laboratory test as to diagnosis, special precautions must be observed to insure that the particular patient involved actually is suffering with schizophrenia. As one reads many of the reports and grants that some disorder was alleviated, the question comes to mind, was it schizophrenia? Not infrequently physicians, particularly those less accustomed to examining mental patients, tend to call many diverse forms of bizarre behavior by the name schizophrenia.

2. *Criterion of improvement.* Amelioration of symptoms, whether spontaneous or due to the treatment, may be obvious to everyone. On the other hand, in many cases it is questionable whether any improvement has occurred. The personal bias of each investigator makes it necessary to fix a standard of improvement, and in doubtful cases to agree in advance to call no change an improvement unless it is quite obvious to the family, the nurses, the physicians and, to some extent, to the patient himself. In our experiments we consider the general behavior as it impresses non-medical persons, but in addition we ask the medical staff to estimate changes in the emotional responses, the clarity of thought, the association of ideas and the soundness of

* From the Iowa State Psychopathic Hospital.

judgment. If the improvement is not thus established, the case is classified as unimproved.

3. *Control cases.* The disease tends to spontaneous variations. We observe improvement and, in a considerable number of our patients, particularly in those with recent acute onset, we find that under mere protective care the symptoms may lighten or disappear entirely for weeks or even years. In statistical studies, therefore, some device must be found to give assurance that any improvement gained in the experiment was not one of these spontaneous changes in the disease itself. In order to reduce errors from this source as far as possible, we are selecting as a control in each experiment a patient of the same sex, and as nearly as possible of the same age, as the main patient; in addition we try to find one with the same previous type of personality and suffering with schizophrenia of the same subvariety. This patient is treated in every respect exactly as the patient who is being treated with insulin, excepting that in place of insulin a distilled water injection is given. This precaution avoids an error which otherwise frequently occurs. One notes in schizophrenic patients that changes in surroundings, friendly attention, regular examinations, and any form of treatment which gives him the feeling that something is being done for him, will cause at least temporary lightening of his symptoms. If controls are used in this way, they will have all the conditions identical with those of the test patient except that they receive no insulin.

4. *Duration of improvement.* Changes for the better in schizophrenia, whether spontaneous or following particular treatments, may continue for only a few weeks or even a number of years. We have recently personally re-examined more than 300 of our schizophrenic patients discharged during the period from 1929 to 1936, inclusive, who were not treated by insulin. Those discharged five years or more showed 14 per cent of complete recoveries; those away only two to four years, 17 per cent; those seen after only one to two years, 31 per cent. This means that temporary recoveries often occur, but as the years pass, more and more relapses follow. For any form of treatment, statistical evidence will have to be presented, after at least five years' observation following the treatment, to show that improvement has occurred and that it was maintained for significantly protracted periods.

It is evident, therefore, that more careful conditions of experimentation must be required than those which appear to have been present in many of the reports recently published. Cautious scientists must be assured that the alleged improvement was real, that the improvement oc-

curred in actual cases of schizophrenia, that it was not merely spontaneous and independent of the particular treatment, and finally, that it lasted long enough to be considered more than a transitory change.

This discussion may give the impression that we are not optimistic as to the value of Meduna's and Sakel's treatments. A more exact statement would be that we are cautious, in that the reports of others and our own limited experience do not as yet give us substantial grounds for believing that the induction of coma and convulsions by metrazol, or of hypoglycemia by insulin, is a specific cure or even a reliable mitigator of the symptoms of schizophrenia. Experience with this and other insidious diseases of the nervous system, or of the somatic organs, shows that sudden shocks from severe infections, trauma or intense emotion may produce striking changes in the course of the disease, sometimes for better, sometimes for worse. Few shocks to the nervous system are more seismic in their severity than are the epileptiform convulsions produced by metrazol or the hypoglycemic shock produced through insulin. We must await reports of several thousands of carefully controlled applications of these treatments before we can come to final conclusions as to their value.

The danger of insulin shock treatment, also, must be kept in view. The procedure calls for alarming doses of insulin. The patient is carried just to the verge of death. Alertness on the part of the physician is necessary at that critical moment, since a few seconds' delay will permit the blood sugar content to drop too far. The treatment has already been fatal in a number of cases reported from other hospitals.

Neuropathologic reports from at least three reliable sources indicate that petechial hemorrhages in the brain and deterioration of nerve cells, with what probably were merely secondary changes in the glia cells, are occurring. We would like to have proof that these changes in the brain cortex will not be irreversible in patients who survive the ordeal, and that a mental condition will not be induced through them which would be worse or more permanent than the original schizophrenia.

THE PRESENT STATUS OF THE MEDICAL SURVEY*

With the conclusion of the meetings held in the various districts of the Iowa State Medical Society the survey of medical care is now under way in Iowa. Many counties report rapid progress, with most of the individual physician's blanks

*Prepared by the Medical Economics Committee.

already returned to the county secretary. Others are just calling their county meetings to explain the conduct of the survey to the members. Progress should be rapid, and the completed blanks should be in the hands of all county secretaries during the month of September.

The recommendation of the Medical Economics Committee is that in each county a committee be appointed to have charge of the conduct of this survey. This committee should study the instructions, go over the blanks carefully and then at a special meeting of the county society explain them to the members. All blanks on completion should be returned to the secretary of the county society and retained in his office. In a short time summary sheets will be sent to each secretary, and on these the committee should summarize the reports on the individual blanks and forward the summaries to the central office in Des Moines and to the Bureau of Medical Economics of the American Medical Association. The individual blanks are to be retained by the county secretary and only the summaries sent in to headquarters.

In making out the individual blanks the physician should be careful to be as accurate as possible in answering all questions. If it is found necessary to make estimates, such figures should be definitely indicated as estimates. When estimates are made, they should be below rather than above the probable actual figures, so there can be no question but that the survey shows an understatement, rather than an overstatement, of the work done by the physician in the various fields. Inasmuch as it was felt that many physicians would be unable to fill out accurately questions 1, 2 and 3 on Blank 1, Blank 1F was prepared. On Blank 1F the physician is to keep an accurate record of the patients seen under the different headings during one week. In October and again in January each physician and dentist will be asked to fill out another Blank 1F. From this series of three it will be possible to estimate accurately the amount of work done under each heading by the physicians in a year.

The various questions on Blank 1 are to determine as far as possible the answers to questions raised by others in regard to certain features of medical practice in the United States. Question four, "How many hours, during 1937, did you devote to the care of free ambulatory patients in outpatient departments, dispensaries or clinics?" is to determine the extent to which the physicians are giving their services to these institutions which offer free care. Question five requests information as to the amount of immunization and other preventive services which are provided under private medical practice, under health department

activities and through other agencies, and what percentage of this work is done free of charge by the doctor. In this connection it is interesting to note that our morbidity rate for all preventable diseases except smallpox is now lower than any country having a state or insurance scheme for medical care. Question six is asked to determine the amount of free obstetric service being given and also the extent to which the physicians are now giving prenatal care to their patients. Question seven is asked that we may determine from the physician how extensive is the inadequacy of medical care and to what extent it is actually unavailable to those who need it. This question should be carefully considered and a definite statement made as to the types of cases in which needed medical care is not available. Question eight covers a much discussed problem. The medical profession is continually asked to conduct, without adequate compensation and usually without any compensation, the medical programs of various organizations. These groups make a great point of their health programs, asking for all types of services from the medical profession, often requiring many days' services, without any expectation of reimbursing the doctor for time taken from his practice. The total number of hours of service so given will be a revelation to many. Question nine is probably the most important on the blank. Please comment on your experiences and observations concerning the need for medical services and the methods you believe should be considered to supply this need. Most physicians have some experiences with the medical needs of the community. In meeting these we have evolved various schemes which might help to solve the problem. Each physician should give this question serious thought and state the manner in which he believes the need for services in any group can be supplied. From these observations, the results of the serious reflections of thousands of physicians, will come ideas which can be combined by those correlating the material, to make definite and workable plans to meet the need for medical care within the structure of our present system of medical practice.

The earnest consideration of these questionnaires by each physician is absolutely essential if this survey is to accomplish its purpose. Every man in practice is vitally concerned in the various movements on foot to alter the method and type of medical care in the United States. Our answer to the present proposals must be based on the material secured from this survey, together with the results of the careful deliberation of those who are serving us as our representatives in organized medicine.

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES

Under the new plan for postgraduate medical education in Iowa, which was approved by the Council at its meeting July 3, the following representatives from each councilor district have been appointed by their respective councilors to constitute a Committee on Postgraduate Medical Education:

First District—John W. Thornton, Lansing; Ray A. Fox, Charles City; P. R. V. Hommel, Elkader.

Second District—Thomas J. Irish, Forest City; George H. Steele, Belmond; Joseph C. Powers, Hampton.

Third District—Gerritt E. Vermeer, Sheldon; James B. Knipe, Armstrong.

Fourth District—James H. Wise, Cherokee; Allen C. Starry, Sioux City; J. James Duffy, Denison.

Fifth District—Julian M. Bruner, Des Moines; Albert A. Schultz, Fort Dodge.

Sixth District—Cecil W. Seibert, Waterloo; Clinton E. Harris, Grinnell; James J. Noonan, Marshalltown.

Seventh District—John T. Hecker, Cedar Rapids; Alfred K. Meyer, Clinton; William M. Fowler, Iowa City.

Eighth District—Bernard J. Dierker, Fort Madison; Raymond E. Peck, Davenport.

Ninth District—Harold H. Webb, Ottumwa; George H. Clark, Oskaloosa; Roy C. Gutch, Chariton.

Tenth District—William F. Amdor, Carbon; Herbert E. Stroy, Osceola.

Eleventh District—Royal A. Becker, Atlantic; Harold McK. Bunch, Shenandoah.

It is the function of this committee to confer with and assist its fellow colleagues in selecting the type of postgraduate course each district desires. Each committee member has been asked to transmit the wishes of his district to the Speakers Bureau after a definite outline for a postgraduate course has been determined. In this way, it will be possible for the Speakers Bureau to present courses planned by the physicians themselves. Thus far, under the new system, five requests have been received and the following postgraduate courses will be conducted, beginning around the first of October, in the cities designated:

West Union—University Course

Malignancies of the Urinary Tract, with Special Reference to Treatment

Diagnosis and Treatment of Nephritis

Medical Treatment of Non-tuberculous Diseases of the Lungs

Surgical Treatment of Diseases of the Lungs and Pleura

Specific Treatment of Infectious Diseases

Minor Surgery of Today

Fort Dodge

Treatment of Hypertension

Treatment of Gastro-intestinal Disorders

Medical Treatment of Non-tuberculous Diseases of the Lungs

X-Ray Therapeutics of Acute Infections

Treatment of Infections of the Genito-urinary Tract

Diagnosis and Treatment of Nephritis

Minor Surgery of Today

Diagnosis and Treatment of Common Skin Disorders

Dubuque

Treatment of Hypertension

Treatment of Gastro-intestinal Disorders

Medical Treatment of Non-tuberculous Diseases of the Lungs

X-Ray Therapeutics of Acute Infections

Treatment of Infections of the Genito-urinary Tract

Diagnosis and Treatment of Nephritis

Diagnosis and Treatment of Common Skin Disorders

Modern Treatment of Anemia

Sheldon

Treatment of Hypertension

Diagnosis and Treatment of Common Skin Disorders and Cancer of the Skin

Diagnosis and Treatment of Neuroses

Malignant Tumors of the Mesenchymal Tissue: Diagnosis and Treatment

Peptic Ulcer

Diseases of the Gallbladder and Liver

Roentgenology of Gastro-intestinal Tract

Surgical Treatment of Diseases of the Lungs and Pleura

Emmetsburg

Vitamins and Their Clinical Significance

Modern Treatment of Anemia

Roentgenology of the Gastro-intestinal Tract

Diagnosis and Treatment of Neuroses

Diseases of the Gallbladder and Liver

Treatment of Infections of the Genito-urinary Tract

Diagnosis and Treatment of Common Skin Disorders and Cancer of the Skin

Surgical Treatment of Diseases of the Lungs and Pleura

The regular extension courses covering various phases of medicine and surgery cost \$10 for eight lectures. The fee for the University Course to be held in West Union is \$5. Any physician wishing to enroll in these courses should contact a member of the Committee on Postgraduate Medical Education in his district.

There are also four "refresher courses" in pediatrics and obstetrics available this fall. Federal funds have been allotted for their presentation. If there are members who have not had the opportunity of attending a "refresher course," the Speakers Bureau will be very glad to conduct such a course upon request.

Complete outlines of the courses will appear in the next issue of the JOURNAL, giving dates, hours, locations and speakers for the postgraduate course meetings. Further information may be obtained by writing the committee members in your district, or the Speakers Bureau.

RADIO SCHEDULE

WOI—Wednesdays at 4:00 p. m.

WSUI—Mondays at 7:45 p. m.

September 7 Syphilis— Robert F. Hansen, M.D.

September 14 The Biology of Cancer—

John L. Kestel, M.D.

September 21 Malaria— Frank M. Fuller, M.D.

September 28 Droplet Infections—

A. C. Starry, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
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1938 Supplement—Books About Doctors and Doctor's Problems

Presented through the courtesy of the Polk County Woman's Auxiliary

Compiled by MRS. RUSSELL C. DOOLITTLE

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Lang, Alexander—1. *Dr. Scarlett*, and 2. *The Methods of Dr. Scarlett*.

Rohlf, W. A., M.D.—*Good Morning, Doctor*. The Torch Press, 1938.

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Brown, Henry C.—*A Mind Misplaced*. Dutton Publishers, 1937.

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Flexner, James T.—*Doctors on Horseback*.

Folett, Wilson—*Are Children Vegetables?*—Article in February Atlantic, 1938.

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Furnas, C. C., and Furnas, S. M.—*Man, Bread and Destiny*. Reynal and Hitchcock, 1936.

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Groves, Ernest, and Blanchard, Phyllis—*Introduction to Mental Hygiene*.

Hall, Radclyffe—*The Well of Loneliness*. Covici Company, 1928.

Heiser, Victor, M.D.—*An American Doctor's Odyssey*. W. W. Norton Company, 1936.

Holmes, Harry N.—*Out of the Test Tube*. Ray Long and R. Smith, 1934.

Hurd-Mead, Kate Campbell, M.D.—*History of Women in Medicine*. Haddam Press.

Jastrow, Joseph—*Wish and Wisdom*. D. Appleton, Century Company, 1935.

Kirkpatrick, E. A.—*Mental Hygiene for Effective Living*.

Knyveton, John—*Diary of a Surgeon in the Year 1751-1752*.

Krausch, Elsa—*A Mind Restored*.

Link, Henry C.—*The Return to Religion*. The Macmillan Company, 1936.

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McLaren, Ian—*A Doctor of the Old School*.

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Morton, Rosalie Slaughter, M.D.—*A Woman Surgeon*. Frederick A. Stokes, 1937.

Mursell, James—*Streamline Your Mind*.

Patton, Stewart, M.D.—*Signs of Sanity*. Charles Scribner, 1922.

Rivilin, Harry N.—*Educating for Adjustment*.

Sabin, Florence—*Franklin Paine Mall (Biography)*.

Seabury, David—1. *Help Yourself to Happiness*, and 2. *Keep Your Wits*.

Shaffer, Laurence—*The Psychology of Adjustment*.

Sokoloff, Boris—*Napoleon, a Doctor's Biography*.

SOCIETY PROCEEDINGS

Emmet-Dickinson Society

Physicians from the Emmet and Dickinson County Medical Societies met Thursday, August 18, at the Coleman Hospital in Estherville. James B. Knipe, M.D., of Armstrong, presented a paper on Spinal Injuries.

Linn County

A special meeting of the Linn County Medical Society was held Tuesday, August 9, at the Hotel Roosevelt in Cedar Rapids, with two guest speakers. William David Haggard, professor of surgery and clinical surgery, Vanderbilt University, Nashville, Tennessee, spoke on Clinical Syndromes of Gallbladder Disease; Their Differentiation and Treatment. The discussion was opened by J. Stuart McQuiston, M.D., of Cedar Rapids. Gershom J. Thompson, assistant professor of urology, University of Minnesota, Rochester, Minnesota, presented a paper on Transurethral Resection of the Prostate Gland, and his address was discussed by N. G. Alcock, M.D., of Iowa City, and Jennings Crawford, M.D., of Cedar Rapids.

The next meeting of the society will be Thursday, September 15, and physicians throughout the state are cordially invited to be present to hear James S. McLester, M.D., of Birmingham, Alabama, speak on the Clinical Aspects of Nutritive Deficiency. Future meetings of the organization are also scheduled as follows: Thursday, October 6, Marius Nygaard Smith-Petersen, M.D., of Boston, Massachusetts; and Thursday, November 10, Roger Anderson, M.D., of Seattle, Washington.

T. F. Hersch, M.D.,
Chairman, Program Committee.

Wayne County

The Wayne County Medical Society met Thursday, August 11, for a six o'clock picnic dinner, after which a business and scientific session was held. E. B. Howell, M.D., of Ottumwa, presented the address of the evening, speaking on Fractures.

Iowa and Illinois Central District Medical Association

The fall meeting of the Iowa and Illinois Central District Medical Association will be held Friday, October 7, in the Blackhawk Hotel, in Davenport. The following program has been arranged:

1:30—Motion picture, sound on film, "The Diagnosis and Treatment of Syphilis," produced jointly by the American Medical Association and the United States Public Health Service, under the auspices of the Board of Trustees of the American Medical Association.

3:00—Address by Archibald Hoyne, M.D., clinical professor of pediatrics, School of Medicine of the Division of Biological Science, University of Chicago.

4:00—X-ray Diagnosis and Interpretation, Charles G. Sutherland, M.D., associate in roentgenology, The Mayo Clinic, Rochester, Minnesota.

5:00—Address on Orthopedic Surgery, Marius Nygaard Smith-Petersen, M.D., professor of orthopedic surgery, Harvard University Medical School, Boston, Massachusetts.

A six o'clock banquet will be held at the hotel, after which Clifford J. Barborka, M.D., of the American Board of Internal Medicine, Chicago, will present the address of the evening. Physicians and their wives are cordially invited to attend the meeting, and the special entertainment which is being planned for the afternoon and evening.

PERSONAL MENTION

Dr. Floyd A. Springer, formerly of Grimes, and for the past two years at Iowa City, has become associated with Dr. C. N. O. Leir, 302 Equitable Building in Des Moines.

Dr. R. M. Sorensen of LeMars, medical director of District Health Unit No. 1, will leave September 15 to continue his studies at Johns Hopkins University in Baltimore. During his absence of one year, his duties will be assumed by Dr. Harry H. Ennis, formerly of Baxter, and for the past six weeks, acting director of District Health Unit No. 3, with headquarters in Manchester.

Dr. Edward M. Honke, who was graduated in 1932 from the Creighton University School of Medicine, has become associated for the practice of medicine, with Dr. Lawrence E. Pierson, at 504 Davidson Building in Sioux City.

Dr. Donald H. Kaump, pathologist at the Iowa Methodist Hospital in Des Moines, was guest speaker for the Perry Rotary Club, Wednesday, August 17. He spoke on general phases of "Cancer."

Dr. A. A. Pace of Toledo, has recently announced that Dr. Howard C. Bos, formerly of Oskaloosa, is now associated with him in the practice of medicine and surgery. Dr. Bos was graduated in 1936 from Northwestern University Medical School, and has served internships at the Iowa Methodist Hospital in Des Moines, the Henrotin Hospital in Chicago, and the San Francisco and County Hospital in San Francisco.

Dr. David O. Holman, who for the past three years has practiced at Nora Springs, is leaving that vicinity to take up special study at the Marquette University School of Medicine in Milwaukee. His practice has been taken over by Dr. Lewis A. Bascom, who comes directly to Nora Springs from Rochester, Minnesota. Dr. Bascom is a recent graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, and served his internship at Mercy Hospital in Cedar Rapids.

Dr. T. B. Lacey, assistant superintendent of the Iowa Institution for Feeble-minded Children at Glenwood, spoke before the Council Bluffs Rotary Club, Friday, August 5, on "The Cause of Mental Deficiency."

Dr. E. P. Russell, formerly associated with the department of surgery, State University of Iowa, College of Medicine, has entered the private practice of medicine and surgery in Burlington, where he has offices in the Iowa State Bank Building.

Dr. Wayne B. Brown, assistant superintendent of the Hospital for Epileptics and School for Feeble-minded at Woodward, has been appointed to that position at the Mount Pleasant State Hospital, where he has already gone to assume his duties.

Dr. R. T. Lenaghan, of Clinton, was entertained by the Maquoketa Rotary Club Tuesday, August 9, as its guest speaker. Dr. Lenaghan presented an illustrated lecture on "The Nature, History and Statistics of Cancer."

Dr. L. H. Mattice has arrived in Belmond, where he will take over the practice of Dr. George F. McBurney, who is retiring from active practice. Dr. Mattice was graduated recently from the State University of Iowa, College of Medicine, and interned at St. Luke's and Miller Memorial Hospitals in Duluth, Minnesota.

Dr. Leslie F. Eaton, after almost five years of practice in Schaller, has moved to Salina, Kansas, and disposed of his practice to Dr. D. C. Deters, who has just completed his second year of internship at the Iowa Methodist Hospital in Des Moines.

Dr. Clarence M. Porter has recently been appointed assistant superintendent of the Hospital for Epileptics and School for Feeble-minded at Woodward, where he has been engaged in the private practice of medicine for the past nine years.

Dr. Fred L. Nelson, Jr., who was graduated in 1936 from the Temple University School of Medicine in Philadelphia, and who interned at the Hackensack,

New Jersey, General Hospital, has opened offices in Ottumwa, in the same building with his father, Dr. Fred L. Nelson. The younger Dr. Nelson will specialize in obstetrics and gynecology.

Dr. Sterling A. Barrett, who has been assisting in the office of Dr. Fred E. Carpenter of Newton, has left for Waterloo, where he will enter the offices of Dr. F. Harold Reuling and Dr. Henry A. Bender. Dr. Barrett was graduated in 1934 from the Jefferson Medical College of Philadelphia, and served his internship at the Henry Ford Hospital in Detroit.

Dr. Dickinson C. Richards, who has practiced for the past ten years in Rockville Centre, New York, has come to Independence, where he will temporarily take over the practice of Dr. M. C. Melrose. Dr. Richards was graduated in 1921 from the Creighton University School of Medicine.

MARRIAGES

The marriage of Miss Doris Kintz of Spencer and Dr. Clare C. Jones, also of Spencer, took place Monday, July 25, in Sioux Falls, South Dakota. After a wedding trip through the western states, Dr. and Mrs. Jones will return to Spencer, where Dr. Jones has been associated in the practice of medicine with Dr. C. C. Collester for the past five years.

Miss Mary Agnes McLaughlin of Stuart, and Dr. Francis W. Houlihan of Ackley, were united in marriage Thursday, July 28, at All Saint's Church in Stuart. The bride is a graduate of the Mercy Hospital Training School for Nurses in Des Moines, and Dr. Houlihan has practiced for the past three years in Ackley, where the young couple will live after returning from their wedding trip.

DEATH NOTICES

Hageboeck, Alfons Ludwig, of Davenport, aged seventy-one, died suddenly July 28, as the result of a cerebral embolism. He was graduated in 1889 from the State University of Iowa, College of Medicine, and at the time of his death was a member in good standing of the Scott County Medical Society.

Harris, Edwin Ewell, of Grinnell, aged seventy-one, died August 6, after being in ill health for the past five years. He was graduated in 1895 from Howard University College of Medicine, Washington, D. C., and at the time of his death was a life member of the Poweshiek County and Iowa State Medical Societies.

Lezotte, George D., of Muscatine, aged eighty-one, died July 4 after a three years' illness. He was graduated in 1881 from Rush Medical College, University of Chicago, and at the time of his death was a life member of the Muscatine County and Iowa State Medical Societies.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

State Medicine

Use of Term in Former Medical Society Proceedings

In view of the wide discussion at the present time centering around the term "state medicine" it is interesting to recall the place it occupied in medical society proceedings forty or more years ago.

The annual program for 1884 includes a Section of Sanitary Science and Hygiene. In 1891 the name of the Section was changed to that of Hygiene and State Medicine. This Section was retained through the succeeding years until 1908, frequently being referred to as the Section of State Medicine.

In the report of the chairman,¹ A. W. Cantwell, M.D., of Davenport, at the meeting in 1891 of the Iowa State Medical Society, state medicine was defined as "the connection of the State with that branch of Science which related to the prevention, cure or alleviation of the diseases of the human body. It embraces not only all public sanitary measures, but also the practice of medicine insofar as it is regulated by the State. This practice aims not simply at the cure of disease, but rather at the prevention of it, and in this way at the promotion of public health; continually hoping, and not only hoping, but working for reforms that are good, reforms that are practical, reforms that are in a word for the good of man's estate both mental and physical."

Physician members of the State Board of Health frequently served as chairman of this Section. The discussions were concerned with such subjects as school hygiene, mental diseases, tuberculosis, vital statistics, control of infectious diseases, disinfection, sanitation, public water and milk supply, sewage disposal and social diseases.

For a number of years the annual program of

the American Medical Association included an Oration on State Medicine. In 1902 a leading Iowa physician, J. M. Emmert, M.D., of Atlantic, delivered this oration at the session in Saratoga Springs, New York. The address was entitled *State Medicine, Past, Present and Future*²—and represented a wide survey or review of many problems carefully prepared, indicating extensive research and a most creditable presentation. It was pointed out that State Medicine had its origin with Moses, the great legislator; and that the Mosaic, Talmudic and Justinian laws formed a fair code for the preservation of human life. The Bible was referred to as one of the best textbooks on hygiene which had ever been written.

The development of the laws and regulations for the isolation of the sick and for quarantine against infectious diseases was presented in historic sequence from its beginning in the fourteenth century to its establishment in the United States in the seventeenth and eighteenth centuries. The importance of International Sanitary Conferences was emphasized to determine the incidence and control of different diseases throughout the civilized world. The principal large epidemics in the United States, of smallpox, yellow fever, scarlatina, measles and angina (diphtheria) were included.

An interesting account was given of the growth of hospitals, of pharmacology, early pure food laws, of legal medicine and medical jurisprudence, as well as the story of vivisection, tuberculosis, human and bovine transmissibility, governmental control and establishment of tuberculosis sanatoria. Here we find one of the earliest references to the need of a Federal Department of Health

1. Proceedings of Iowa State Medical Society, 1891.

2. Jour. Amer. Med. Assn., xxxviii:1568 (June 14) 1902

and a National Board of Medical Examiners. Public baths were recognized as a necessity to municipal hygiene. The comment of General Booth of the Salvation Army was quoted "that soapology and scrubology as well as theology are recognized as potent christianizing agencies."

There was further discussion at some length of the restriction of venereal diseases and detention of syphilitic patients in special sanatoria, and the article closed with the following significant conclusion: "If all the foregoing regulations are established, I am sure they will tend to improve the moral and physical welfare of our Nation." * * * "State Medicine is a creation of necessity in times of public danger, but its future development will be in proportion to the scientific character of its work, and to the appreciation on the part of the public of the economic and beneficent results of such work."

If the concept of state medicine as expressed by these pioneer Iowa physicians could prevail today, it would deprive state medicine of much of the menace it seems to imply, particularly as to its encroachment upon the field of medical practice.

STATE INTERPROFESSIONAL PROGRAM

An interprofessional program of a high calibre is being planned for the afternoon of Wednesday, October 12, to be held in Waterloo, in conjunction with the annual convention of the Iowa State Association of Registered Nurses.

The committee in charge is making every effort to secure speakers to present both viewpoints of the National Health Conference recommendations as they affect the five professions. The Right Reverend Monsignor Maurice F. Griffin of Cleveland, Ohio, has accepted the invitation to discuss why the public will suffer if such a program is adopted.

It should be well worth the time of many physicians to spend Wednesday afternoon, October 12, in Waterloo, where they can hear themselves and their interests discussed from all points of view.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

First American Congress on Obstetrics and Gynecology, under the sponsorship of the American Committee on Maternal Welfare, Inc., September 11 to 15, 1938, Cleveland, Ohio. Office of the Congress, 650 Rush Street, Chicago, Illinois.

American Board of Internal Medicine. Written examinations will be held in various parts of the

United States, October 17, 1938, and February 20, 1939. Application for the October examination must be received before September 15, and for the February examination on or before January 1. Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

American Roentgen Ray Society, September 20 to 23, in Atlantic City, New Jersey.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, September 22 to 24, in White Sulphur Springs, West Virginia. Dr. James R. Bloss, 418 Eleventh Street, Huntington, West Virginia, Secretary.

Fourth Annual Meeting, Mississippi Valley Medical Society, September 28 to 30, 1938, at the Hannibal-LeGrange College, Hannibal, Missouri.

Second National Assembly of the International College of Surgeons, October 13 and 14, 1938, at the Bellevue Stratford Hotel in Philadelphia, Pennsylvania.

Eleventh Annual Graduate Fortnight of the New York Academy of Medicine, October 24 to November 4, New York, N. Y. Subject for 1938 session—Diseases of the Blood and Blood-forming Organs.

Twenty-third International Assembly of the Interstate Postgraduate Medical Association of North America, October 31 to November 4, 1938, Public Auditorium, Philadelphia, Pennsylvania. Dr. William B. Peck, Freeport, Illinois.

Symposium on Mental Health held by the Section on Medical Sciences of the American Association for the Advancement of Science, Winter Meeting, December 27 to 31, 1938, Richmond, Virginia. Secretary, Paul O. Komora, 50 West 50th Street, Room 822, New York, N. Y.

CORRECTION IN CANCER COMMITTEE REPORT

The report of the Cancer Committee as it appears on page 343 of the July JOURNAL should be corrected to show receipts from Fremont County of \$255 rather than \$55. The additional sum collected from various parts of the state after the close of the campaign was \$34.08, rather than \$234.08 as stated.

PREVALENCE OF DISEASE

	July '38	June '38	July '37	Most Cases Reported From
Diphtheria	7	11	15	(For State)
Scarlet Fever	75	180	117	Polk, Black Hawk
Typhoid Fever	13	3	14	Black Hawk, Des Moines
Smallpox	41	114	111	Iowa, Grundy, Monroe
Measles	286	1,036	38	Woodbury, Montgomery, Cerro Gordo
Whooping Cough.....	102	102	152	Woodbury, Linn, Cerro Gordo
Cerebrospinal Meningitis	1	3	7	Boone
Chickenpox	37	173	57	(For State)
Mumps	11	92	12	(For State)
Poliomyelitis	4	1	7	Floyd
Rocky Mountain Spotted Fever	3	1	3	Boone, Buchanan, Jackson
Tuberculosis (Pulmonary)	76	53	44	(For State)
Undulant Fever	7	12	11	(For State)
Gonorrhea	177	197	216	(For State)
Syphilis	252	276	299	(For State)

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE HEART IN PREGNANCY—By Julius Jensen, Ph.D., assistant professor of clinical medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.50.

A TEXTBOOK OF PATHOLOGY—By William Boyd, M.D., professor of pathology and bacteriology, University of Toronto. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

HEMORRHOIDS—By Marion C. Pruitt, M.D., associate in surgery, Emory University School of Medicine, Atlanta, Georgia. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.00.

SYMPTOMS OF VISCERAL DISEASE—By Francis Marion Pottinger, M.D., professor of clinical medicine, University of Southern California. Fifth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.00.

SYPHILIS, GONORRHEA AND THE PUBLIC HEALTH—By Nels A. Nelson, M.D., director, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health, and Gladys L. Crain, M.D. The Macmillan Company, New York, 1938. Price, \$3.00.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION—By Marion Douglass, M.D., assistant professor of gynecology, Western Reserve University; and Robert L. Faulkner, M.D., senior clinical instructor in gynecology, Western Reserve University. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.75.

THE NEW INTERNATIONAL CLINICS—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Volume II, First Series (old Forty-eighth). J. B. Lippincott Company, Philadelphia, New York and Montreal, 1938.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS—By H. O. McPheeters, M.D., attending physician, New Asbury, Fairview and Northwestern Hospitals, Minneapolis, Minnesota; and James K. Anderson, M.D., instructor in surgery, University of Minnesota School of Medicine. The F. A. Davis Company, Philadelphia, 1938. Price, \$4.50.

PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY—By Adam Edward Schlanser, M.D., colonel, Medical Corps, United States Army. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

MEDICAL STATE BOARD QUESTIONS AND ANSWERS—By R. Max Goepp, M.D., formerly professor of clinical medicine, Graduate School of Medicine, University of Pennsylvania. Seventh edition, revised. The W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.

ELECTROTHERAPY AND LIGHT THERAPY—By Richard Kovacs, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Third edition, revised. Lea and Febiger, Philadelphia, 1938. Price, \$7.50.

MATERIA MEDICA, DRUG ADMINISTRATION AND PRESCRIPTION WRITING—By Oscar W. Bethea, M.D., professor of clinical medicine, Tulane School of Medicine. Fifth edition, revised. F. A. Davis Company, Philadelphia, 1938. Price, \$5.00.

PEDIATRIC SURGERY—Edward C. Brenner, M.D., director of surgery, Riker's Island Hospital. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN—By John A. Hardy, M.D., El Paso, Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.

BOOK REVIEWS

THE NEW INTERNATIONAL CLINICS VOLUME II, New Series I (old 48th)

Edited by George Morris Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1938.

This issue of the International Clinics is replete with interesting and worthwhile articles on medical and surgical subjects. Of the twenty-two papers in the volume, that by Horace Gray of the Stanford University School of Medicine, on sacro-iliac pain is one of the most instructive. It includes a detailed study of the anatomy of the pelvis, first by photography and then by diagrams, demonstrating the mobility and axes of rotation. A chapter is devoted to the etiology and diagnosis, and emphasis is placed upon treatment by manipulation.

A report by E. L. Eliason on four cases of cortical adrenal tumors presents a clear picture of the clinical entity and the results of surgery. Maurice Muschat presents a clinic on bilateral renal carbuncles, outlining diagnostic and therapeutic methods. The review of regional ileitis by Henry J. Tumen is a splendid paper on an unusual clinical condition.

The study of this volume corroborates the opinion previously expressed by this reviewer of the merit of this publication in keeping one informed on the advances in medicine.

D.K.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY

of the American Medical Association for 1937, with the comments that have appeared in THE JOURNAL. Press of the American Medical Association, Chicago, 1938. Price \$1.00.

This book is more than a mere record of the negative actions of the Council on Pharmacy and Chemistry. It gives in full the reasons for the Council's rejection of various preparations, but it also records results of the Council's investigations of new medicinal agents not yet out of the experimental stage, and frequently contains reports on general questions concerned with the advance of rational drug therapy. All three categories of reports are represented in the present volume.

This issue includes reports on avertin with amylene hydrate (now accepted for new and nonofficial remedies), benzedrine sulfate (the active constituent of the notorious "pep" pills, but a promising drug when its limitations are recognized), catgut sutures (a survey of the sterility of the market supply), evipal soluble (a comprehensive review of the evidence for the usefulness and limitations of the drug), histidine hydrochloride (a study of the usefulness of the drug in peptic ulcer, to be considered in connection with the report rejecting larostidin, a proprietary brand, for unwarranted and exaggerated claims), mandelic acid

(an authoritative statement of the limitations of this drug which the Council has now accepted), and vinethene (a careful study of the evidence for the drug, which the Council has accepted for one year as an anesthetic to be used in short procedures).

Other notable reports of outright rejection of products are those on causalin (causyth), an unsafe and dangerous preparation proposed for use in arthritis; glutamic acid hydrochloride-calco, proposed as a conveyor of hydrochloric acid, with unsubstantiated claims of clinical effectiveness; larodon "Roche", proposed as a substitute for other well established analgesic and antipyretic drugs and marketed with exaggerated and unwarranted claims. Two reports on sulfanilamide appear, a nomenclature and status report together with reprints of THE JOURNAL editorials giving the warnings which, if obeyed, would have avoided the series of deaths which resulted from the marketing of the ill-fated elixir of sulfanilamide-Massengill.

At the end of this volume appears an eulogy of George Henry Simmons whose death deprived the Council on Pharmacy and Chemistry of its founder and American medicine of a worthy and faithful servant.

THE ART OF TREATMENT

By William R. Houston, M.D., formerly professor of clinical medicine, University of Georgia. The Macmillan Company, New York. Price, \$5.00.

Although it is doubtful whether so dignified an author as this former member of the medical faculties at the University of Georgia and at Yale-in-China would be flattered by the analogy, one is tempted to describe this book as the doctor's guide on "How to Win Friends and Influence Patients."

The author describes the work as an attempt to raise the application of therapeutics above what he terms "the veterinary level," to emphasize the personal and human aspects of treatment. As might be expected, there is considerable emphasis on psychotherapy; one wonders, after reading more than eighty pages refuting the doctrines of Freud as a basis for psychotherapy, if there is not too much of this emphasis.

The reader has the feeling that he is sitting and chatting with a keenly observant clinician of long experience and sound common sense. These are the wordy but fascinating memoirs of a grizzled veteran in the battle against disease. An example of his viewpoint and approach may be obtained from his comment on the introduction of pneumothorax, phrenic nerve avulsion, and rib resection in the treatment of pulmonary tuberculosis: "It may be expected that these aggressive procedures will be resorted to more often than is desirable. A new generation does not know how well patients did on rest alone."

Fully one-third of the book is given over to a discussion of conditions in which psychotherapy is

the chief therapeutic method, organ neuroses, hysteria, and neurasthenia. Other sections deal with diseases treated chiefly by nursing care, such as typhoid fever and the acute respiratory infections; diseases for which there exist specific forms of therapy; conditions treated predominantly by imposing a limitation on life or the manner of living, such as obesity and pulmonary tuberculosis; diseases requiring correction of a perverted physiology, such as peptic ulcer, hepatic and metabolic dysfunctions; and finally, a group of diseases in which therapy is tentative, empirical, or experimental, such as arthritis and the allergies.

H.J.S.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS

By H. O. McPheeters, M.D., F.A.C.S., and James Kerr Anderson, M.D., F.A.C.S. Illustrated. F. A. Davis Company, Philadelphia, 1938. Price, \$4.50.

Although the form of presentation of the material contained in the section devoted to varicose veins is not materially different from that of the previous books by McPheeters, the wealth of knowledge is considerably enlarged and several new chapters have been added. One entire chapter covers the now popular preliminary ligation combined with injections form of treatment. Complete directions for performing the operation are given. The causes of failure as taken up and adequately discussed here should be of the greatest interest to most men doing this work because failures do occur on every side. In the ulcer treatment the newer aids are fully discussed, elastoplast bandages, the new non-rubber stockings, and the use of vasodilating drugs such as acetyl-beta-methyl-choline chloride. Infra-red photography is mentioned briefly with great promises and hopes for its future beneficial use. To date the expense of this form of therapy prohibits its general use.

Remembering that the title of this book is the "Injection Treatment" it is interesting to note how closely the author of the second section on hemorrhoids follows this. He states that injection can be used exclusively in approximately 25 per cent of the cases while in 50 per cent of the cases a cure can be accomplished by a combination of injection treatment and surgery. The remaining 25 per cent cannot be treated except by surgery. The reasons offered are accurate and plausible. The disadvantages of the injection method, its complications and contraindications are covered effectively and are strictly limited to the injection method. This is not true of most discussions of the bad features of the method. As a rule some of the bad features of surgery are included by an over-enthusiastic "injectionist" who has convinced himself that his method is without fault.

C.H.J.

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, OCTOBER, 1938

No. 10

Symposium on Operative Obstetrics

GENERAL INDICATIONS AND CONTRA-INDICATIONS FOR OPERATIVE DELIVERY*

E. D. PLASS, M.D., Iowa City

In general, interference with the normal progress of parturition is justified only in the interest of the mother or her child, without consideration for other factors. While there is common agreement with such a statement, there is also evidence that only a genuine distortion of logical thought could bring some of the recently advanced indications within its confines. On the avowed basis of protecting mother and child, certain so-called indications have appeared, which upon closer critical analysis appear only to represent devices to further the convenience of the physician. Such pseudo-indications as the "prophylactic" use of forceps, routine version, and cesarean section for occiput posterior or breech presentations fall into this category and can only be condemned.

On the maternal side, relatively few indications are uniformly accepted, other than those which have come down from the days when childbearing was viewed as essentially physiologic in character, that is, disproportion, obstruction, and inordinate prolongation of the birth process.

With the increase in safety of abdominal delivery under aseptic surgical technic, the need for the older "absolute" and "relative" indications for cesarean section has largely disappeared. Definite disproportion determined by physical findings suggests the need for abdominal section. Attempts to overcome actual disproportion by the use of high forceps or podalic version are no longer justified, although in pre-aseptic days they were useful procedures. The same statement can be made regarding the use of induction of premature labor,

which is no longer a reasonable method of treating cephalo-pelvic disproportion.

When the disproportion is at all marked, elective cesarean section before the onset of labor is the procedure of choice; but when the disproportion is slight it may be advisable to postpone final decision until the efficiency of the forces of nature can be determined. Distinction should be drawn between a "trial labor" and a "test of labor." The former represents a number of hours of labor contractions with evidence that labor is progressing, but without the development of conditions favorable to the descent of the fetus. On the other hand, a real "test of labor" is possible only after the cervix is fully dilated and the membranes ruptured, conditions which in normal parturition alone make possible the progress of the fetus through the birth canal. Attention must also be called to the fact that all painful, uterine contractions are not labor pains, which, by their nature, can be identified only by the effect which they have on the cervix, effacement and dilatation. Uterine contractions which do not produce such results are not, properly speaking, labor pains, and do not constitute a "trial labor."

Obstruction of the pelvic cavity by a tumor mass large enough to prevent passage of the fetus and not displaceable by ordinary procedures is obviously an indication for abdominal delivery. Uterine fibroids, ovarian cysts, and ectopic organs may gravitate into the pelvis and provide the source of the obstruction, while, in rarer instances, intrinsic tumors, such as cervical carcinoma, rectal cancer, or pelvic exostoses may be present.

Since there is no adequate definition of "normal labor," it is difficult to define undue prolongation of parturition. No delay in the stage of dilatation, in itself, constitutes an acceptable indication for radical operative intervention. First stage inertia is best treated by the liberal exhibition of sedatives and by the maintenance of proper food and

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

fluid intake, under which the patient can usually be carried to complete dilatation, when operative delivery can be effected with relatively little risk. The frequent practice of comparing all labors with an arithmetic average and recommending interference because birth is not completed within a given period is quite unjustifiable in view of the well known variations in the length of parturition. Only where there are objective signs of maternal exhaustion should delivery through the incompletely dilated cervix be given serious consideration.

On the other hand, undue delay in the second stage is best managed by adhering to the old established rules for intervention. While the head is above the spines there is no time indication, whereas with the head in mid-pelvis two hours of expulsive pains without advance can be assumed to demonstrate the inadequacy of the natural powers. With the head on the perineum for one hour without advance, low forceps application is advisable.

The simpler procedures, such as low forceps and breech extraction, may be employed in many instances to spare the parturient who has some complicating disease, for example, toxemia, tuberculosis, chronic nephritis, or cardiac disease, in the belief that bearing-down efforts are likely to be harmful or that prompt delivery is desirable.

The majority of other maternal indications are debatable, or there is an honest difference of opinion concerning the proper therapeutic procedure. Ante partum hemorrhage falls into the latter category. Placenta previa presents a generally accepted indication for intervention, but there is one group of authorities who argue that all such patients should be delivered abdominally, while others insist that this method of attack should be reserved for exceptional cases. Especially in the marginal and partial varieties, delivery from below after rupture of the membranes or the introduction of a Voorhees bag is at least as safe for the mother. Certainly when the child is premature, as is usually the case, the increased fetal mortality rate is of little concern, since the size of the child inevitably prejudices its chance for survival. Premature separation of the normally implanted placenta most frequently results in only mild bleeding which is followed by the onset of labor. In the occasional case, particularly when the placental separation is complete, operative intervention is required and cesarean section is widely advocated, although there has recently developed a tendency toward less radical procedures.

On the fetal side, there is only one generally acceptable indication for interference—prolapse of the cord. The actual procedure in such cases

must be determined according to the condition of the birth canal. Replacement of the cord, the introduction of a Voorhees bag, forceps, version, and even cesarean section are at times indicated, but it is impossible to lay down definite criteria for their use.

So-called "fetal distress" is frequently designated as an indication for operative delivery, although there is little to support the ordinary diagnostic criteria and nothing to justify the methods of treatment employed. Clinical experience makes it doubtful whether intra-uterine asphyxia can be determined by any available method. Certainly alterations in the rate and rhythm of the fetal heart tones cannot be accurately interpreted, and the presence of meconium in the amniotic fluid may be of no significance. It is commonly argued that a fetal heart rate above 160 or below 100 per minute indicates fetal asphyxia induced by cranial pressure. Even if this interpretation were correct, immediate operative delivery, especially by forceps, would seem illogical, since it would necessarily involve further compression and would inevitably increase the risk. In any event, failure to be stampeded into operative delivery on such grounds is not followed by an increased infant mortality rate. If the truth were really known, it would very probably appear that more babies are killed by attempts to relieve "fetal distress" than are saved by the heroic but futile efforts so often made to save life.

To preserve infant life is a noble ambition, but there is considerable doubt as to whether the last few years have not seen the development of an exaggerated concept of the value of a child in terms of maternal risk. The statement that the patient "especially wants a live baby" is frequently used to justify radical operative procedures which multiply the maternal hazard many fold; and there is reason to believe that the modern obstetric operative orgy is largely based upon logic of this sort. Maternity inevitably involves a certain risk, which must be reduced to a minimum if our mortality rate is to be lowered. Cesarean section, the most frequently performed and most dangerous major obstetric operative procedure, has such a poor record as a child lifesaving device that it is rarely if ever justified merely because a patient "wants a baby."

A contraindication to operative delivery exists whenever there is no definite indication for active intervention. In other words, obstetric operations should not be performed solely for "convenience." Other and more positive contraindications are relatively uncommon, but nevertheless definite. In many pregnancies complicated by disease, such as chronic nephritis, acute toxemia of late preg-

nancy, cardiac disease, and other chronic conditions, the interruption of gestation is indicated, but can be accomplished safely only after medical therapy has made the patient a reasonable surgical risk. In general, it is wise to follow the dictum that when disease complicates pregnancy, the first indication is to treat the disease, attention to the pregnancy being reserved until later.

Obviously, also, contraindications may be based upon various other factors, such as deficient training, which makes an operator incompetent to perform the indicated procedure, and inadequate assistants, or surroundings unfavorable to the maintenance of aseptic technic or to providing necessary accessory therapeutic measures. Under such conditions, compromises must be made or the patient must be removed to an institution where the deficiencies can be supplied. If adequate obstetric care is to be accorded the mass of patients, these contraindications must be observed and the practitioner must abandon the old idea that he is by nature, if not by training, equipped to handle all emergencies, and that any surroundings are good enough for an obstetric operation. "Adequate" must be defined in terms of the best available within reasonable distance, and not in terms of the nineteenth century concept of adequacy.

By and large, then, the indications and contraindications for obstetric intervention are interrelated, in that what is not an acceptable indication is in reality a definite contraindication, and acceptable indications are those based upon the physician's clinical judgment founded upon his experience and the accumulated experience of others. When in doubt, it is wiser not to interfere with the natural forces of parturition.

GENERAL CONSIDERATION OF OCCIPITOPOSTERIOR POSITIONS DURING LABOR*

LAWRENCE E. KELLEY, M.D., Des Moines

Head presentations occur in about 95 per cent of all deliveries; the occiput posterior position occurs as a right occiput posterior in about twenty per cent and as a left occiput posterior in less than five per cent of all vertex presentations. The above estimate of the incidence of the occiput posterior position is accurate enough for practical purposes. In other words, less than one-fourth of vertex presentations are at some time during the progress of labor diagnosed as either right or left occiput posterior positions.

The diagnosis is made early on external examination. It is unnecessary for me to mention all

the findings, but one point should always be remembered; if the small parts are easily felt in the anterior portion of the fundus, one should make a provisional diagnosis of a posterior position and not change until this assumption has been definitely disproved at several subsequent examinations. On auscultation the heart tones are best heard in the flank. However, if the head is poorly flexed the tones are best heard near the mid-line; but this occurrence should not lead to a faulty conclusion. A rectal examination completes the diagnosis. The sagittal suture is either in the left or right oblique with the small fontanel at its posterior end, and the anterior fontanel will be in an anterior position. The levels of the fontanel indicate the degree of flexion. We reserve the vaginal examination for use if and when it seems some interference is advisable, and this examination is a check and final diagnosis. After the provisional diagnosis of a posterior position is made and verified several times by palpation, auscultation and rectal examinations, it is well to tell the interne, nurse, husband and relatives present that this labor is going to be prolonged because of the position of the child, in multipara by from one to two hours, and in primipara from three to four hours, and that a closer watch of both mother and child is necessary.

The mechanism of labor explains the above statement. As in other vertex presentations descent must take place, but rotation is through an arc of 135 degrees instead of the short 45 degrees of the anterior varieties. This process of rotation is the time consuming process which tires out the forces of labor and the mother. It is in this situation that analgesics are most beneficial if wisely used and supervised. The other movements of flexion, extension and external rotation are similar to other vertex mechanisms. Deep transverse arrest may occur temporarily, or posterior rotation may take place and still spontaneous delivery occur.

One need only have a practical mind and an insight into American surgery over the past twenty-five years to understand why such a dark picture has been painted of the prognosis of occiput posterior positions. In fairly recent times our literature has been flooded by warnings from those who would make obstetrics a surgical specialty. This has unfortunately tended to maintain the impression that these posterior positions will result in serious dystocia with a definite increase in fetal and maternal mortality rates. It is true that certain difficulties will be encountered, labor will be prolonged, and operative interference will be more frequent, probably five per cent more common than in the anterior positions. How-

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

ever, these facts should put us on our guard and when a diagnosis of a posterior position is made we should concentrate more on the management of the labor in an effort to conserve the mother's strength to endure a longer labor. Inertia due to exhaustion is the most common complication encountered, provided our original diagnosis is correct.

Treatment is expectant and supportive, with careful observation of the progress made. Because of the often insufficient uterine contractions in these positions, I believe that a time limit is a very unreliable indication for interference. When we feel that interference is demanded for the best interests of the mother or child and that progress is definitely and completely at a standstill, a careful reconsideration of the diagnosis and an analysis of the labor should be made.

After the usual preparation for operative delivery, an anesthetic should be given and a thorough verification of the diagnosis should be made. The following points should then be carefully observed:

1. Manual rotation should be tried aided by rotation of the shoulder through the abdominal wall. At times the internal hand may be used to rotate the trunk by pressure on the shoulder. With rotation completed or nearly so, with the hand still in the vagina, forceps may be applied, and the delivery completed as usual in the anterior position.

2. If manual rotation is impossible Kielland's forceps may be used to accomplish rotation, or the double application of Scanzoni's maneuver may be executed.

3. If interference is demanded before the head has entered the pelvis, and if effacement and dilatation are complete and there is no disproportion between the child and the pelvis, a podalic version and extraction is preferred to a forceps delivery.

4. When the head rotates posteriorly and interference is necessary, an episiotomy with forceps applied to the head as it lies is sufficient.

5. There are rare cases of disproportion between child and pelvis where cesarean section is indicated, not because of the occiput posterior position, but because of an abnormal pelvis, etc.

In this paper I have avoided quoting statistical studies and entered into the discussion of complicated technical theories, in order to present the subject in its simplest form. I have tried, rather, to stress the fact that an occiput posterior position is not always a calamity, and that in the great majority of cases it can be terminated successfully, although it is necessary for the obstetrician

in charge to exert a great deal of thought, patience, consideration and management.

THE FORCEPS OPERATION*

HOWARD A. WEIS, M.D.

Davenport

In 1580 when Chamberlen developed the first pair of obstetric forceps, midwives were delivering all babies; the doctor was not allowed in the confinement room until the midwife had failed. The doctor was then called in to complete the delivery, and knowing nothing about the technic of normal labor, he naturally knew less about abnormal labor. If it was impossible to deliver the child by version, it was removed piecemeal by sharp hooks. The Chamberlens kept their instrument a trade secret until 1753, but since that time, numerous models have been and are still being devised. The models in most common use today are the Simpson, Elliott, and Kielland.

The Simpson forceps originated in Scotland, was developed by the Vienna school, and popularized in this country by Dr. De Lee, who added a few improvements. The shanks are separated beginning at the lock, thereby diminishing the amount of compression on the babe's head.

The Elliott forceps is distinguished by longer and more slender shanks. The pelvic curve is less pronounced, making them better for higher applications. This forceps compresses the head more than the Simpson model, but this fault is minimized by a thumb-screw in the handles which keeps them separated.

The Kielland forceps was introduced in 1908, and consists of a straight forceps with the pelvic curve eliminated, and with a sliding lock, making it possible to apply one blade farther along the head than the other.

The forceps with fenestrated blades compresses the head much less than the solid blade instrument and is therefore safer. The solid blade instrument such as the Tucker-McLane is easier to introduce and to remove, but requires much more compression on the head to keep it from slipping. Luikhart of Omaha has recently brought out solid blade instruments designed to eliminate this objection. There is no "best" forceps; and no one instrument is suited to all operations. Either the Simpson or the short Elliott forceps is suitable for the lower applications, the longer Elliott instrument for higher positions of the head, and the Kielland for the higher, transverse and posterior positions of the head. A single

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

operation may require two or all three of these instruments.

Indications for forceps cannot be learned from a textbook—only by experience. We should wait and see what the woman can accomplish, not what she can endure. Where lack of progressive advance in the presence of good uterine contractions proves natural forces to be inadequate we should come to the patient's assistance; but to withhold instrumental aid until it is demanded is usually waiting too long, and the results may be no more satisfactory than those attending any emergency procedure. With the head low in the pelvis, one will interfere sooner than if the head is high, since there is less danger to the mother. This is especially true of the inexperienced operator. To wait for a rise in the maternal pulse rate is usually waiting too long. The caput succedaneum which is increasing in size with no advance of the head is a good indication for interference. If an intelligent patient says she is becoming exhausted her statements should receive serious consideration. The first sign of distress on the part of the babe will be a marked diminution of the fetal heart rate. A drop of 20 to 30 beats a minute counted in the interim between pains is an indication to terminate labor.

The following conditions must be present before one attempts a forceps delivery:

1. The pelvis must be big enough to permit the delivery of an unmutated child. Though we practice in Iowa where there are few deformed pelvises, nevertheless we cannot assume that every woman who comes to us for delivery has an ample pelvis. Appearances are often deceiving.

2. The cervix must be effaced and dilated, and the membranes ruptured. Most of the mistakes in forceps delivery are made because the operator disregards this point. The custom formerly taught, and unfortunately still practiced by many, of applying the forceps through a half dilated cervix and using the head as a dilator, should be unreservedly condemned. In most cases the operator has not been able to complete the operation in any way, and even when successful it practically always results in bad tears of the cervix, with severe hemorrhage and subsequent invalidism. Almost every patient, if carried along a few hours under morphine or morphine scopolamine, will achieve complete dilation. There will be cases (usually when an occiput posterior position prevails) when the cervix refuses to dilate completely, and then I believe Dührssen's incisions of the cervix at the three, six, nine and twelve positions on the clock will eliminate the cervical resistance.

3. The head should be engaged. If it is not, the forceps operation is only a trial measure. A head

which is floating in the presence of satisfactory second stage pains, signifies so great a degree of disproportion that delivery by forceps should not be attempted.

When the forceps operation has finally been decided upon, thorough preparation should be made. With two lives at stake it is one of the most serious of all operations. It should be performed with the patient on a table. The cross-bed position may suffice for easy operations, but one can never tell for certain when it is going to be such; even the experts are fooled at times. A large head with a pronounced caput may be much higher than it seems, especially on rectal examination; or it may turn out to be an occiput posterior position. Usually some suturing is necessary, and this can be done much more satisfactorily with the patient on a table.

The anesthesia is very important, and should be given by a competent anesthetist. Ether will usually be the choice, although ethylene or nitrous oxide are ample for the lower operation. Even the administration of anesthetics in forceps cases is an art to be acquired, and is quite different from anesthesia in general surgery. Complete anesthesia is usually necessary to secure the correct application of the blades, after which the anesthetic may be discontinued. In this manner we utilize the reflex response of the uterine muscle and the half voluntary efforts of the patient, both of which may be of great assistance. Before applying the forceps the bladder should be catheterized, since every bit of pelvic space will be necessary. So important is this fact that one writer recommends a catheter attached to every pair of forceps so that the operator cannot forget to use it.

Before introducing the blades, a final careful examination should be made, and the position of the head and the fontanels accurately determined. Since considerable molding may have occurred and since a large caput may be present, it may be necessary to introduce a hand into the vagina to locate the babe's ear, thus determining the position of the occiput. With this mental picture clearly established, the blades may be introduced and fitted to the head. One should always avoid applying them to the occipitofrontal diameter, which of all applications is most dangerous to the babe. In introducing the blades the handle should be held as one would hold a fountain pen, never as one would grasp an ice pick, with the whole hand. Two fingers of the other hand are passed into the vagina to act as a guide and to make sure the blade passes within the cervix. The blade should be introduced at the posterior commissure; a common mistake is to present the tip of the blade at

the side of the vulva and try to push it directly into place at the side of the head. The second blade is introduced into the hollow of the sacrum and then rotated to its position opposite the first. I quote De Lee when I say that once the blades are applied, the obstetrician should remember that he has a child's brain in the grasp of a powerful vise, and only the greatest care and gentleness will save this wonderfully delicate structure from injury. Relative to this, one can only say that some babies must have a charmed life.

To guard against excessive traction, the operator should be seated; and while this is not a lesson in golf, he should keep the elbows close to the body while applying traction. This way he will use only his biceps muscles and not the whole weight of his body. The sitting position also enables him to be more at ease and allows him to concentrate all his attention upon his work. The traction should be applied on the shanks and not on the handles. The larger the head the more separation of the handles there will be, so that the more traction we apply on the handles, the more we compress the head. The first traction is purely a test traction. It should be applied slowly, and the fetal heart must be auscultated to be sure the cord is not caught in the grasp of the forceps. Traction should not be applied for more than fifty seconds, and then released gradually with the blades separated, thus imitating the forces of nature as far as possible. If on this traction one meets with a stony resistance which is readily recognizable, the proper procedure is to remove the blades and rotate the head a trifle, then to re-apply them and try again. That stony hardness indicates bony obstruction which cannot be overcome by force. The head may also be rotated with the forceps, but this is done only by swinging the handles through an arc and not by twisting the forceps. Pendulum tractions are never justified with the head high in the pelvis, and seldom if ever with the head low unless it is blocked at the outlet.

There should be little hazard in the forceps operation, when performed upon a patient in good condition, by an operator who knows how to recognize conditions that contraindicate the operation, or forbid its continuance. On the other hand, when the operation is unskillfully conducted, if the instruments are applied without an accurate diagnosis of position and presentation, when persistent efforts are made to overcome obstacles by brute force, and when the forceps are applied through a partially dilated cervix, the danger to life is considerable. Fetal mortality is higher in the forceps operation than in normal labor,

but most of this mortality is due to improper technique. We must constantly remember that the forceps operation is one of skill and not of force.

THE AFTER-COMING HEAD*

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When the head follows, rather than precedes the rest of the baby's body during labor, invariably the infant's chances of death and of severe damage are increased. Several factors contribute to this increased fetal risk. The breech, especially if one or both legs present, is smaller than the head and consequently is a poorer dilating wedge, leaving much for the after-coming head to do. The head has no time to mold and conform to the pelvis, and therefore, must be compressed rather rapidly. Even in a precipitate labor in a multipara, the passage of the head through the pelvis is a matter of hours, whereas in a breech presentation the head must traverse the entire length of the pelvic canal in a period of minutes, if the baby is to be born alive. Consequently, tears of the falx and tentorium with resulting intracranial hemorrhage are extremely common and account for most of the fetal deaths encountered in breech delivery. Numerous other dangers encountered by the fetus are: brachial and spinal cord injury, asphyxia resulting from compression of the cord between the head and pelvic brim, from prolapsed cord or from premature detachment of the placenta, fractures and dislocations. As a result, the fetal mortality rate resulting from breech is variously reported as eight to fifteen per cent. This rate is approximately two to three times that which follows vertex presentation.

A large part of the deaths and injuries which occur when the head is after-coming may be avoided by the proper conduct of labor. Gordon, Garlick and Oginz,¹ reporting on 3,301 breech deliveries in the hospitals of Brooklyn, New York, found that when the woman with a breech presentation was delivered spontaneously or with minor assistance, the fetal mortality rate was 6.7, and the rate of fetal injury was 2.0 per cent. When extraction was performed, the mortality rate was 18.7, and the rate of injury was 5.0 per cent. If the breech was "broken up" or decomposed, the mortality rate became 28.9, and the rate of injury 9.9 per cent. These figures demonstrate conclusively that conservatism in the management of breech deliveries is not only highly desirable, but also absolutely imperative. Al-

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

though breech presentation occurs in only 3.2 to 3.4 per cent of all labors, the incidence is nevertheless sufficiently high so that anyone practicing obstetrics must cope with the after-coming head on numerous occasions.

Obviously, the first step in the management of the patient with a breech presentation is prophylaxis. External version, as described by Marmaduke Wright, is a safe procedure if done gently, and fears that the cord may become entangled about the fetus, or that the placenta may become separated are generally groundless. It should preferably be done between the thirtieth and the thirty-eighth weeks of pregnancy, and its only drawback lies in the large percentage of failures, approximately 30 per cent. However, there is no reason why it should not be repeated several times, if necessary. By the time the breech has become engaged in the pelvis, external version is practically impossible and delivery by the breech must be considered.

Cesarean section has been advocated as a method of delivery in breech presentation, but when one considers that the fetal mortality rate resulting from this procedure in Iowa is practically the same as that generally reported from breech, it offers no advantages. On the other hand, the obvious disadvantage of cesarean section is the greatly increased risk to the mother. The after-coming head offers practically no increased risk to the mother while section presents not only more than a ten-fold increase in her chances of death, but also imposes definite restrictions in regard to future pregnancies. On these grounds it is felt that cesarean section should not be generally employed for the treatment of breech presentations. There is, however, the occasional patient in whom abdominal delivery is justifiable; the woman with a contracted pelvis. Disproportion between the head and pelvis can be estimated only in vertex presentations. Therefore, in the presence of a mild degree of pelvic contraction combined with breech presentation, it is advisable to perform cesarean section provided external version is tried and has failed.

The principles in the management of labor when the head is after-coming, are:

1. To preserve the amniotic sac as long as possible during the first stage in order to offer a better dilating wedge and to prevent prolapse of the cord.

2. To wait for descent of the breech *until the umbilicus is born* in order to secure adequate dilation of the cervix, vagina and vulva, and to avoid the use of unnecessary methods of traction on the frank breech or on an extended leg.

3. To empty the bladder and bowel before beginning any assistance.

4. To guide the head through the pelvis according to the accepted mechanisms of labor.

5. To have an assistant "follow down" the head so as to prevent its extension or the extension of an arm into the nuchal position.

6. To wrap the body of the baby in a warm, moist towel to prevent stimulation of respiration with possible aspiration of fluid.

7. To use one of the various maneuvers, or forceps, for the extraction of the after-coming head.

8. To employ generous episiotomy routinely in primigravidas and frequently in multigravidas.

The preservation of the amniotic sac can best be accomplished by the avoidance of repeated examinations and by keeping the woman recumbent rather than allowing her to walk about. It is desirable to preserve this sac because the breech cannot dilate the cervix sufficiently well for the subsequent passage of the firm, hard and unmolded head. Obviously, when one or both feet are presenting, the membranes are in constant danger of rupture and the cord is extremely likely to prolapse if it is long enough.

The figures quoted above from the hospitals of Brooklyn, New York, indicate with great clarity the mounting dangers to the fetus when interference is begun too soon. If there is anything of importance to be stressed in the management of labor with an after-coming head, it is this: allow the maternal soft parts to be dilated by the fetus before interference is begun. This can only be accomplished by waiting for the umbilicus to be born, whether the fetus presents by the frank breech, a single or double footling. Attempts to deliver the frank breech by blunt hooks, while it is still in the vagina, are dangerous; even traction in the groin with one or both index fingers may often cause injury, and is extremely inefficient. Forceps applied to the breech invariably slip off, causing abrasion and other trauma to the skin and underlying tissues. Of course, if one or both legs are presenting, it is comparatively easy to hasten labor by traction upon them, but it is unwise to do so, since the extraction of the baby through maternal soft parts not properly dilated is a frequent cause of intracranial hemorrhage. Some obstetricians have advocated routinely the "breaking up" or decomposition of the frank breech by bringing down one or both legs while the breech remains in the vagina. This practice is not to be recommended as long as labor is progressing and the breech is descending, even if the descent is slow. There should be no time limit for interference in breech delivery. Of

course, if labor comes to an absolute standstill, or if the condition of the mother or the baby demands immediate delivery, one should resort to decomposition of the breech. Otherwise, one should wait until the umbilicus is born.

When the umbilicus has been born and the decision to aid the woman has been made, it is highly desirable to place the patient under a complete and adequate anesthetic. Catheterization of the urinary bladder is an important procedure, because it minimizes trauma and insures more room in the pelvis for the after-coming head. The perineal floor may or may not be "ironed out" according to the condition of the soft parts and the practice of the operator. The body of the baby is wrapped in a warm, moist towel, both to decrease the chance of fetal respirations and to afford the operator better traction than could be obtained from the bare body covered with slippery vernix. Some obstetricians recommend drawing down the umbilical cord at this point and tucking it behind one or the other sacro-iliac joints of the baby, to minimize the chance that it will be compressed at the pelvic brim by the head and so that its pulsations may be observed. Usually the cord is compressed by the head at the pelvic brim at this time, and asphyxia of the baby results. However, compression of the cord should not influence the operator to employ too much haste because undoubtedly more babies are lost by intracranial hemorrhage resulting from a rapid extraction than by asphyxia from a prolonged passage of the head through the birth canal. Among our own statistics on breech delivery, asphyxia is a relatively uncommon cause of death of the fetus compared with intracranial hemorrhage.

If the presentation is a frank breech, extraction of the legs may be achieved by Pinard's maneuver. This consists in exaggerated flexion of the baby's thigh upon the trunk. Such exaggerated flexion puts the hamstring muscle group on the stretch, causing flexion of the lower leg upon the thigh, thus placing the baby's foot and leg within easy reach of the operator. When the extraction is begun, the head should be guided into one or the other of the oblique diameters of the pelvic inlet, by allowing the baby's back to turn, or by assisting its rotation, to the side of the mother toward which it was originally directed. A slight rotary movement will serve to bring the bisacromial diameter of the child into approximation with the anteroposterior diameter of the outlet.

An assistant should "follow down" the head with moderate pressure upon the fundus of the uterus, in order to prevent its extension or the

occurrence of an arm extended into the nuchal position. Extension of the head must be prevented, or the chin will catch somewhere in the pelvis, while the nuchal arm is one of the serious complications of delivery when the head is after-coming. If an arm does assume the nuchal position, avoidance of panic on the part of the operator is the first step in coping with the complication. The solution lies in having previously achieved the full relaxation of deep anesthesia, in pushing the child back up into the birth canal, and after disengaging the shoulders and arms above the pelvic brim, in rotating the back of the baby away from the arm which has assumed the nuchal position. Occasionally, these maneuvers will not be effective, especially if the anesthetic is not sufficiently deep. In that event, it is better to deliver a live baby with a fractured humerus than a baby dead from asphyxia.

Continued downward traction will soon bring the lowermost halves of the scapulae outside the vulva. The traction should be gentle, and at this stage of the extraction the full benefits of having previously allowed complete dilation of the soft parts by the breech before interfering will be realized; otherwise such force must be exerted that rupture of intra-abdominal organs with resulting hemorrhage, brachial nerve and spinal cord injuries may occur. When the lowermost halves of the scapulae become visible, arms must be gently swept out of the vulva in such a fashion that two fingers of the operator's hand will splint the humerus. A fractured humerus will almost certainly result if one finger is employed as a hook. With the arms delivered, the back of the baby must be rotated anteriorly, and one of the various maneuvers, or forceps, may be employed for the extraction of the after-coming head.

The rotation of the back anteriorly tends to rotate the engaged head so that the occiput assumes a directly anterior position. When this has occurred, the Mauriceau-Smellie-Veit, the Wigand Martin, the Prague maneuver or forceps on the after-coming head may be employed. Routine employment of the Piper forceps on the after-coming head has been advocated by many obstetricians. However, when serious difficulty is encountered in extraction, it is usually because of the unduly large size of the head, or because the head is partially extended high in the birth canal, in neither of which contingencies is the Piper forceps of much use. When the head is low in the birth canal, forceps is easily applied and perhaps its use adds a certain flare and flourish to the delivery. However, the Mauriceau-Smellie-Veit maneuver, carefully employed, will prove to be perfectly satisfactory in the large ma-

majority of patients. The index finger, or the first two fingers, of one hand are introduced either into the mouth or applied over the malar prominences of the baby's cheeks and the body is allowed to rest upon the palm of the hand and the forearm, with the legs straddling the latter. Two fingers of the other hand are hooked over the shoulders, and are used to transmit downward traction until the occiput appears under the symphysis. The purpose of the finger, or fingers, in the mouth or over the malar prominences is not a tractive one, but is purely to maintain flexion of the head and prevent its extension. The body of the baby is then carried anteriorly toward the mother's abdomen, flexion of the head is maintained, and the mouth, nose, brow and eventually the occiput successively emerge over the perineum. Suprapubic pressure, applied by an assistant upon the uterus in the axis of the superior strait, may prove to be of great value in effecting the delivery of the head. This pressure has quite a different object in view from the "follow down" previously described. In the latter, the purpose is to prevent extension of the head upon the neck, or the extension of an arm to a position alongside of or behind the head. By the time the entire body of the child has come to lie outside the vulva and only the head remains in the birth canal, pressure upon the fundus will assist the operator materially. However, caution is necessary; otherwise such force may be exerted, compressing the head so thoroughly, that the medulla may herniate through the foramen magnum. Some obstetricians prefer not to hurry the delivery of the head at this point, but depress the perineum so that the baby's mouth is exposed, thus allowing mucus to be cleared from the trachea, the baby to breathe, and the head a little more time to conform to the pelvic outlet.

Episiotomy is urgently indicated before instituting the extraction of the head, especially in primigravidas. Not only does it make the extraction easier and prevent complete tears of the perineal body, but also its use greatly diminishes the chance of serious and rapid compression of the head with resulting intracranial hemorrhage.

In conclusion, it may be said that the maximum number of babies presenting by the breech may be saved by the employment of external version when the condition is diagnosed, by waiting for the descent of the breech until the umbilicus is born before beginning extraction, by employing moderate pressure upon the fundus of the uterus in order to prevent extension of the head or an arm, and by the generous use of episiotomy.

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THE CESAREAN PROBLEM*

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The cesarean problem, which has appeared during the past twenty-five years, and especially in the last decade, is probably today the most important in obstetric practice. Originally devised and utilized to overcome insuperable obstacles to delivery and thus to conserve maternal and infant life, this operation has been prostituted to the convenience and possibly even to the financial well being of the physician. It still remains, as it always has been, the most dangerous method of delivery, and is responsible in itself for a large percentage of all maternal deaths. In spite of these facts, the incidence of its performance is steadily increasing and one wonders when the end of the operative orgy will appear.

It is actually only by considering the problem in a large way that its magnitude can be appreciated. Assuming that there are two and one-quarter million births in the United States annually and that one and one-half per cent of the births are by the abdominal route, it is obvious that 33,750 cesarean sections are performed each year. Assuming further that the maternal mortality rate is five per cent, a figure which probably represents a fair approximation, it appears that nearly 1,700 mothers die following the operation. This constitutes roughly fifteen per cent of the total annual maternal mortality for the country, and data from special surveys support this statistical approach.

Cesarean section is unfortunately technically easy and thus appeals to the occasional operator as a way out of his obstetric difficulties. It is not well enough recognized that considerable judgment is required in the selection of cases and that attention must be paid especially to certain contraindications if the operation is to be made safer. Emphasis should be laid upon the proved fact that, when abdominal delivery is utilized as an emergency procedure, the maternal risk is inevitably increased. The safest time to effect this method of intervention is before the onset of labor, while the hazard increases thereafter directly in proportion to the hours of labor.

The original indications for cesarean section are still universally accepted, but the field has been broadened by some operators until there is practically no limit, and the so-called "indications" have become nothing more than "excuses." Occiput posterior positions, breech presentations in primigravidas, and even the desire of the patient to avoid the discomforts of labor are occasionally offered, but can be given no serious thought since

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

they obviously have no scientific weight. Another growing, but disturbing, tendency is the performance of abdominal delivery solely for the purpose of effecting sterilization. Delivery through the natural passages with subsequent abdominal sterilization is much safer and far more logical.

The so-called "fetal" indications for cesarean section are largely debatable unless it can be shown that there is no prohibitive increase in the maternal risk. Placenta previa is a case in point. The recent tendency is to recommend abdominal delivery for all patients with this complication, the diagnosis being made without recourse to vaginal examination which increases the danger of postpartum infection. It is doubtful that anything approaching an accurate diagnosis can be made under such circumstances, since minor degrees of premature separation of the normally implanted placenta may be indistinguishable from certain types of placenta previa, and can ordinarily be treated successfully by less radical procedures. It is admitted that abdominal delivery may be a child-saving device in certain cases of placenta previa, although there is no good evidence that the maternal salvage is greater, providing that auxiliary therapy aimed at combating blood loss and shock is carried out before vaginal intervention is practiced. There is undoubtedly some justification for abdominal delivery in selected cases of placenta previa, which is not evident in other predominantly fetal indications. For example, in eclampsia the maternal risk is probably doubled when cesarean section is performed during the acute episode, and certainly it is only rarely, if ever, that a mother should be subjected to such a hazard. However, these problems involving adequate indications are essentially relative and must always be solved according to the judgment and conscience of the physician.

The relative safety of the various types of cesarean section is now clearer than it has been previously. For a time, the low operation was hailed as the solution of the problem of eliminating the major risks from abdominal delivery, but subsequent experience has indicated the falsity of that contention. When an elective operation is decided upon, the classical procedure is probably preferred, since it is technically simpler and no more dangerous. Moreover, the true cervical operation cannot be done unless there has been sufficient labor to produce an adequate lower uterine segment. On the other hand, it is well established that, when cesarean delivery is decided upon after a "trial labor" or a "test of

labor," the low technic is safer and should be employed.

The cesarean hysterectomy is probably the safest of all methods of abdominal delivery, since it removes the source of greatest danger, the traumatized uterus. Deaths following cesarean section, that cannot be explained on the complicating condition, are usually due to general peritonitis, the organisms entering the uterus through the cervix and penetrating the uterine wall at the incised and imperfectly healed wound. When the patient who is to be subjected to abdominal delivery is obviously infected, the procedure of choice is the cesarean hysterectomy, since any other type of operation carries a mortality rate of approximately twenty-five per cent. Various other types of cesarean section have been developed for dealing particularly with the infected parturient, but have never attained any considerable popularity because the technic is difficult or the procedure fails to impress the surgeon as logical.

The other outstanding indication appears in patients who have fibroid tumors demanding radical intervention because of obstruction. The myomatous uterus is easily infected, and moreover the tumors themselves will probably later demand hysterectomy. The common belief that the removal of the uterus after the child has been extracted adds to the risk of the operation is not supported by available data, providing the surgery is competent. Undoubtedly many patients would be saved each year, if the validity of this statement were widely accepted.

Another phase of the problem concerns the care of the woman who has previously had a cesarean section. The old dictum "once a cesarean, always a cesarean" has rightly been questioned, because undoubtedly many such patients later have delivered without difficulty. However, rupture of the uterus through the site of the old incision is a very real danger and occasionally leads to tragic results. Although the character of the earlier convalescence may give some clue to the strength of the scar, it is impossible by direct examination to confirm the impression thus gained, and consequently every scar must be looked upon with suspicion. If the first operation was performed while the patient was still a primigravida and not in labor, it would seem unwise to subject the scar to the strain of vaginal delivery. On the other hand, if the cesarean section was done on a parous woman for some incidental complication, such as pla-

centa previa, conditions are entirely different and a subsequent delivery from below is much more reasonable, and may frequently be conducted safely.

Except when a cesarean section is performed because of a chronic complicating disease, there is little justification for the performance of sterilization. Surgical sterilization is practically irreversible, although many procedures have been devised for reestablishing fertility. In spite of the fact that as many as six or seven successive abdominal deliveries have been performed on a single individual, it is usually conceded that sterilization is proper at the second or third operation, providing there is more than one living child. No completely satisfactory sterilization technic has yet been developed, but measures aiming at the occlusion of the tubes rather than their removal are most satisfactory. Simple ligation is not sufficient but the Madlener procedure has generally given good results and can be recommended; a loop of each tube is doubly crushed with a hemostat and each crushed portion is ligated; care should be taken to crush only the mucosa.

It has already been stressed that cesarean section is not an efficient child-saving measure. At times the child fails to survive because its chances have been prejudiced by the maternal complication, but even excluding these cases the child born by cesarean section seems not so well equipped for extra-uterine life as is the child born normally. There is no adequate explanation for this fact, but statistical evidence makes the conclusion inescapable.

In Iowa, the situation is improving but it is still serious. Data are available covering two three-year periods, 1930-32, and 1933-35, inclusive. For these intervals, the maternal and fetal mortality rates in this state were as follows:

	No. of Cases	Stillbirth and Neonatal Death Rates	
		Maternal Mortality Per Cent	Neonatal Death Rates Per Cent
1930-32	900	7.0	16.4
1933-35	972	5.4	12.1

The only logical attack upon the cesarean problem consists in pointing out repeatedly to the profession that it is essentially a dangerous procedure and that its performance on insufficient indications is a major factor in our present high maternal mortality rate.

OTHER OBSTETRIC OPERATIONS*

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The subject assigned is rather all inclusive and may include many procedures not discussed here, but because of the time allotted only the following will be taken up: manual dilatation of the cervix, Dührssen's incisions, vaginal hysterotomy, and manual removal of the placenta.

MANUAL DILATATION OF THE CERVIX

Let it be said that manual dilatation of the cervix is not recommended as a method to be used in obstetric practice. No matter how careful one may be, forcible dilatation cannot but result in mild to severe laceration of the cervix, and because of this the use of either Dührssen's incisions or vaginal hysterotomy is the procedure of choice. There is the very occasional case of the multipara, where dilatation of the inner ring is completed, the cervix is soft and four centimeters or more dilated and where delivery because of severe hemorrhage becomes imminent, when one is perhaps justified in the use of manual dilatation. When the cervix is short of being completely dilated and when because of some complication it becomes necessary to deliver, one is often tempted to complete the dilatation manually before applying forceps or doing a version, but it is at this time very judicious to use Dührssen's incisions.

DUHRSSSEN'S INCISIONS

In 1890 Dührssen first advocated the procedure of utilizing the principle of multiple incisions of the partially dilated cervix, allowing room for passage of the infant without dangerous laceration of the cervix. Dührssen's incisions should not be used and are valueless, or even dangerous, unless the patient is so far advanced in labor that the internal os is completely dilated and the external os is dilated four to five centimeters. The incisions should be so placed that, if there is further laceration of these incisions, this laceration will not be carried up to the region of the blood vessels. Because of this, lateral incisions are not the incisions of choice. The proper positions for the incisions are ten, two and six of the clock.

VAGINAL HYSTEROTOMY

Because of the limited field of Dührssen's incisions, there are times when vaginal hysterotomy is preferable. Vaginal hysterotomy is often referred to as "vaginal cesarean section" and may be used in therapeutic abortion and

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rapid premature delivery as well as in rapid delivery at term. This procedure is useful as a means of performing therapeutic abortion when the patient's condition is so grave that it prohibits the loss of valuable time by the more desirable methods, as in the case of fulminating vomiting of pregnancy. Vaginal hysterotomy may also be used in dealing with hydatiform mole, allowing more complete exploration of the uterine cavity. Preeclampsia is a condition which occasionally warrants rapid delivery, and particularly so where the condition is complicated by a rigid cervix. During labor it is occasionally noticed that the head is deeply engaged, labor has been prolonged, and the cause of prolongation is a rigid cervix, the cervix failing to dilate more than one to two centimeters. Dührssen's incisions are not of much value for this condition and, if delivery becomes necessary, vaginal hysterotomy is often the procedure of choice. It should be remembered, however, that the contracted pelvis at term is a contraindication for this type of delivery. Before attempting vaginal hysterotomy the operator must make sure that the child can pass through the pelvis. It becomes obvious that one need not worry regarding contracted pelvis in the case of a premature delivery or therapeutic abortion. Vaginal hysterotomy should not be done in the case of placenta praevia.

I would like to say a few words regarding the technic of this procedure. Incision in the anterior lip is all that is necessary in premature delivery or therapeutic abortion. If the head is fairly small, and it is the judgment of the operator, anterior incision together with two small Dührssen's incisions at the eight and four positions of the clock is sometimes all that is required. For delivery at term, if the head is average sized, incisions in the anterior and posterior lip, extending up far enough to allow the head to pass through, are necessary.

MANUAL REMOVAL OF THE PLACENTA

Manual removal of the placenta can scarcely be discussed without mention of Crede's maneuver and the general subject of the management of the third stage of labor. The placenta should spontaneously detach itself from the uterine wall within a half hour after delivery with nothing more than gentle massage of the fundus for the purpose of determining whether the uterus is contracted or not. The management of the third stage of labor requires at times considerable judgment and can best be expressed in the words of Calkins¹: "Immediately after the delivery of the baby, the hand is placed on the abdomen; the uterus is held very gently with the fingers be-

hind, the thumb in front, and with no attempt to massage the organ unless it shows signs of relaxation and flaccidity. As soon as it changes from a discoid to a globular shape and a trickle of blood appears from the vagina, the organ is vigorously massaged until it becomes firmly contracted and then, by squeezing and gentle downward pressure, an attempt is made to express the placenta. Should the placenta not come out readily, no further attempt is made to express it and no further massage is instituted until some sign of enlargement or flaccidity appears or there is an increase in bleeding from the vagina."

Crede's maneuver, which consists of firmly grasping the uterus between the fingers and the thumb and the expulsion of the placenta by gentle, firm pressure just as one would expel the pit from a cherry, is not advocated unless the placenta will not free itself from the uterine wall. However, there are times when failure of contraction of the uterus causes no separation of the placenta and when hemorrhage becomes so severe that Crede's maneuver must be resorted to. If there is no hemorrhage, one may safely wait for a half hour or more before using Crede's maneuver and if the placenta has not descended into the lower segment of the uterus by this time, it should be used.

If, after two hours of waiting and the occasional use of Crede's maneuver, the placenta is still adherent, manual removal of the placenta should be considered. One must not forget, however, that a distended bladder may cause retention of the placenta and consequently the patient should be catheterized. If still not successful, then the patient should be etherized and Crede's maneuver again attempted before removing the placenta manually. This point is very important, for manual removal of the placenta is one of the most dangerous procedures in the practice of obstetrics, the field being very fertile and the risk of infection very great, much greater, in fact, than when forceps or version is done or when the hand is introduced into the uterus, since these are introduced into the amniotic cavity. With manual removal of the placenta the hand is inserted between the fetal membrane placental attachments and uterine wall and comes in direct contact with thrombosed sinuses. This is an ideal situation for infection.

Before attempting the manual removal of the placenta the patient should be rescrubbed and redraped, and the operator should have fresh sterile gown and gloves. The labia should be separated widely. The hand should be lubricated with sterile green soap. The hand is passed up into the uterine cavity and the placenta is easily

identified. With the other hand upon the abdomen and with to and fro motion of the fingers in the uterus the placenta is gradually separated into the palm of the hand within the uterus by gentle pressure from above with the hand pressing upon the uterus. The internal hand should not be removed from the uterus until the placenta has been entirely detached. After removal of the placenta it is often advisable to pack the uterus with a strip of gauze so that hemorrhage will not continue. This gauze should be removed after twenty-four hours. It should, however, be repeated that with the proper conduct of the third stage of labor, manual removal of the placenta becomes infrequently necessary. In my own limited experience it has become necessary only once in six hundred cases.

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THE MATERNAL HAZARDS OF OPERATIVE DELIVERY*

JOHN H. RANDALL, M.D., Iowa City

Although there is some danger incident to natural childbirth, certainly the hazards are much greater when labor is terminated by some operative procedure. Interference with normal labor increases the risks of childbirth so much that an honest effort should be made to deliver the patient by the natural process, and artificial means should be employed only when it is essential to the welfare of the mother or baby.

The greatest hazard of operative delivery is puerperal sepsis. Vaginal manipulations may introduce virulent organisms into the genital tract from without, and may carry those already present in the vagina higher up into the uterus. We still recognize the fact that in a certain number of severe puerperal infections the organisms were present in the genital tract before delivery, but the majority of virulent infections are conveyed to the patient during or shortly after labor. Virulent organisms will be found in the vagina of obstetric patients before the onset of labor in less than one per cent.

Operative labor always produces a certain degree of trauma to the maternal tissues in the form of bruises, tears, and lacerations. These furnish an atrium for infection. Shock and hemorrhage, which are often the sequel of opera-

tive procedures, lower the vitality of the patient and increase her susceptibility to infection. When one analyzes mortality statistics he must realize the gravity of operative intervention. No statistics are more convincing than those published by the New York Committee.¹ Twenty per cent of their deliveries were operative (69,665 out of 348,310). In this group the sepsis death rate was 4.0 and the total death rate was 10.5 per thousand live births. Eighty per cent of the deliveries were spontaneous and in this group the sepsis death rate was 0.8 and the total death rate was 2.0 per thousand live births. Thus, from the standpoint of infection alone, the maternal mortality rate was increased five times by operative intervention. Why should a physician subject a patient to this increased risk?

Lacerations of the birth canal constitute another maternal hazard of operative obstetrics. Seldom does a patient escape some type of severe trauma in the course of difficult operative manipulations, such as, mid and high forceps, internal versions and breech extractions. These procedures often lacerate the cervix, especially when it is not fully dilated. Rotation of the head with forceps is frequently associated with tears of the vagina, cervix and pelvic floor. The perineum can be protected to some extent by a generous episiotomy but usually some degree of injury is unavoidable. Birth trauma stretches and tears fascial supports of the bladder, rectum, and uterus, and may determine the formation of cystocele, rectocele, and prolapse of the uterus later in life. Although the number of fistulas into the bladder and rectum is becoming less common, operative obstetrics is still an important etiologic factor in their formation. Rupture of the lower uterine segment is not an uncommon event of intra-uterine manipulations such as internal versions and the decomposition of frank breeches. These procedures are especially likely to lead to rupture if the uterus is tonic, if the membranes have been ruptured for some time, and if good relaxation of the patient is not secured by deep anesthesia. Manual dilatation of the cervix is rarely done without producing severe lacerations, and perhaps manual laceration of the cervix would be a better name for the procedure.

When lacerations of the birth canal occur, the physician must contend not only with their immediate effects but also with graver remote results. Following delivery they produce some degree of hemorrhage and expose the pelvic tissues to infection. Many physicians have been faced with the necessity of doing an immediate repair to prevent bleeding from some type of laceration. A tear of the cervix following spontaneous de-

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

livery seldom produces enough hemorrhage to necessitate immediate suturing. Many physicians, too, must have seen severe parametrial infections develop during the puerperium as the result of an infected laceration. If the patient should escape infection and hemorrhage, it is doubtful if she can avoid the remote effects of lacerations. In future years tears of the cervix lead to erosions, eversion and chronic cervicitis with hypertrophy and cystic degeneration. These lesions produce leukorrhea, low backache, pelvic pain, menorrhagia and sometimes repeated abortions. These symptoms may reduce the patient to a state of chronic invalidism. Relaxations of the pelvic floor with cystocele and rectocele, and prolapse of the uterus are usually the direct result of birth trauma. The fascial supports of the bladder, rectum, and uterus can be partially corrected but never completely restored by surgery. Operative obstetrics may leave an imprint upon the patient which time can never erase and which will undoubtedly embarrass the physician for years to come.

A third hazard of operative delivery is hemorrhage and shock. There are three main causes of bleeding following the third stage of labor, namely, atony of the uterus, retention of placental fragments and lacerations of the birth canal. Tears following spontaneous labor do not often produce much hemorrhage unless labor has been forced by pituitrin. Operative intervention, especially when the cervix is not fully dilated, will often produce tears which extend into the bases of the broad ligaments. It is this type of laceration which may produce an exanguinating hemorrhage and which will necessitate immediate repair. Tears of the vaginal walls and of the vulva in the region of the urethra, not infrequently produce a nasty hemorrhage. Loss of blood during the third stage of labor, from any cause, certainly increases the patient's chances of developing puerperal sepsis and lowers her ability to fight infection when it does occur.

Operative obstetrics always produces some degree of shock. This is especially true of difficult operations, such as manual dilatation of the cervix, internal versions, mid and high forceps, and cesarean sections. Many obstetric patients are poor risks because of some underlying complication. The added shock of a difficult operative delivery may swing the pendulum to a fatality in patients who have eclampsia, placenta previa, placenta abruptio, severe cardiac disease, or pulmonary complications. Before contemplating difficult procedures to accomplish a delivery, one should consider the effects of added shock and whether or not the patient will be able to

tolerate it. Operative obstetrics has some economic significance. The majority of published statistics show an increase of both mortality and morbidity rates when patients are delivered by operative procedures. It is variously estimated that fifty to eighty per cent of all puerperal deaths are operative deliveries. However, it would be unfair always to ascribe the cause of death to some type of operative delivery because in many of the cases it is only a contributory factor. No one can rightfully deny the statement that interference with normal labor does increase morbidity. This increased morbidity lengthens the patient's stay in the hospital or her convalescence in her home.

While we must admit that a certain amount of operative obstetrics is essential in the practice of midwifery and that the lives of many babies and mothers have been saved by timely intervention, it is the unnecessary interference with normal labor that we must seek to avoid. In recent years there has been a marked increase in the number of patients delivered in hospitals. It was hoped that the maternal death rate would be greatly lowered by the hospitalization of patients for confinement, but we have been greatly disappointed. The death rate has not been lowered to any extent in recent decades; in fact, in many localities there has been an increase. The benefits of institutional care have been offset by a widespread enthusiasm for operative delivery when the facilities of a hospital are at hand. The doctor who delivers most of his patients in the home has been compelled by lack of equipment to reduce his operative interference to a minimum and he has a lower mortality and morbidity rate than the physician who confines his practice to hospital patients. Fraser² quotes from the Aberdeen report, covering the years from 1918 to 1927, to the effect that the death rate in domiciliary practice is 1.0 per thousand live births for midwives, and 1.7 per thousand for doctors, while in institutions the death rate is 4.5 per thousand live births. Many similar reports show an even greater mortality rate for institutional practice. The increased death rate in hospitals is partially due to the fact that the more complicated cases are sent to institutions, and partially to the increased furor for operative delivery. Many hospitals have a thirty to fifty per cent operative incidence, which is entirely too high.

One of the greatest problems in obstetrics today is the rising incidence of obstetric operations, but more especially of forceps operations and cesarean sections. In some localities internal version and extraction is greatly abused. Plass³ in his report to the White House Conference on

Child Health and Protection states, "When forceps is limited to actual needs, on the basis of maternal indications, instrumental delivery is uncommon, and probably represents not more than five per cent of any given consecutive series of cases. Any great increase over this figure savors of meddlesome midwifery." Throughout this country the average incidence of forceps delivery is around twenty per cent in hospital practice and about five per cent for domiciliary practice. Forceps delivery increases slightly the maternal mortality rate and to a considerable extent the maternal morbidity rate. Stander⁴ in analyzing 1,000 consecutive forceps deliveries found the puerperium to be febrile in 35.4 per cent and the maternal mortality rate to be 1.1 per cent. In this country many physicians are performing forceps deliveries under the disguise of the so-called prophylactic or convenience forceps. While it is to be admitted that forceps done for convenience has a lower mortality rate than when done for maternal indications, we must realize that such interference is not without some danger.

During the past decade there has been an alarming increase in the incidence of cesarean sections. Too many cesarean sections are being done for occiput posterior presentations, for breech presentations, for mild cases of bleeding, for delayed labor, for rigid cervixes, for toxemias of pregnancy and for the excuse of sterilizing patients. In any large series of obstetric cases the incidence of cesarean section should not be more than one per cent. Thirty to sixty per cent of the patients delivered by a section will have a morbid puerperium. The general mortality rate for cesarean section is five to ten per cent. The mortality rate of the elective cesarean section, which is without question the least dangerous, is one to two per cent. Holland⁵ reported 1,202 cesarean sections done before the onset of labor with a maternal mortality of 19 cases or 1.6 per cent.

Some physicians are employing internal version and extraction too frequently in their obstetric practice. The best maternity clinics of the country report an average incidence for internal versions of from one to two per cent. Baer, Reis, and Lutz⁶ reported an incidence for internal versions of one per cent, or 156 in 15,136 deliveries. The maternal mortality rate in this group was 1.03 per cent.

The puerperal death rate in this country is about six per 1,000 live births. This mortality rate can be definitely lowered if doctors will appreciate the beauties of normal obstetrics, the advantages of asepsis, the principles of intelli-

gent watchful waiting, and if they will rely more upon nature.

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HAZARDS TO THE FETUS IN OPERATIVE DELIVERIES*

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The hazards to the infant due to operative deliveries are essentially trauma to first, the intracranial structures; second, the peripheral nerves; and third, the bones and joints. The first group is by far the most common and most serious of the injuries. The mechanism which produces all of these injuries is undue pressure over the whole head or a very localized puncturing force. Ehrenfest classifies these as follows:

- A. Cephaloma internum
- B. Subarachnoid hemorrhages
- C. Dural hemorrhages
 1. Supratentorial
 2. Infratentorial
 3. Mixed type
- D. Brain hemorrhages
 1. Ventricular
 2. Diffuse or circumscribed

The cephaloma internum is an epidural hemorrhage covering the lateral lobes of the brain and is associated with a fracture of the skull and laceration of the middle meningeal artery. There are evidences of injuries to the soft tissues in the region of the parietal bone together with an intracranial pressure and absence of blood in the spinal fluid. Subarachnoid hemorrhages are small hemorrhages located in the subarachnoid space and are usually not serious in nature. They are frequently found with subdural hemorrhages and the symptoms are due to the latter rather than to the former.

The vast majority of intracranial injuries result in subdural hemorrhages. They produce a very definite group of symptoms, and are the most frequent cause of death in the newborn. If the infant survives, there are varying degrees

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

of spastic paralysis, depending upon the extent and location of the hemorrhages.

In order to understand the mechanism and development of these hemorrhages, it is necessary to recall the anatomy of the dural septa. They are the falx cerebri, the tentorium cerebelli and the falx cerebelli. The falx cerebri arises from the crista galli and passes upward and backward, as a sickle-shaped structure, to insert into the upper leaf of the tentorium cerebelli. Enclosed between the superior edges is the longitudinal sinus; its free margin extends down into the sagittal sulcus of the brain between the two hemispheres. The tentorium cerebelli is attached laterally along the petrous portion of the temporal bone and the anterior surface of the occipital bone. Its two leaves, fusing at its inner margin, surround the midbrain. The falx cerebelli, which divides the two halves of the cerebellum, extends downward from the lower leaf of the tentorium to the foramen magnum. These structures are simple thickenings of the dura which invests the entire surface of the brain and are continuous with the dura of the spinal cord. The outer layer forms the periosteum of the cranial vault on its inner surface and the inner layer is in intimate contact with the brain surface. The falx cerebri and the tentorium are so placed that they are supporting structures tending to hold the cranial bones in more or less normal relationship to one another during the process of molding at birth. Due to the peculiar hinge arrangement of the bones of the vault of the skull on those at the base, any pressure applied to opposite sides of the skull at the same time causes an elongation upward of the vertical diameter. This elongation puts a strain on the falx cerebri which is in turn transmitted to the upper leaf of the tentorium by its insertion into it. This leaf, being thin, gives way and causes a rupture of the blood vessels contained between the two leaves with a consequent escape of blood and the formation of a hematoma. During the course of a normal labor or slow extraction the tentorium and falx cerebri tend to stretch and allow molding of the head. Thus it may be seen that pressure suddenly applied to diametrically opposite sides of the skull, whether by forceps blades or by the pubic arch and sacrum in breech extraction and occiput posterior presentations, causes a sudden stretching of the tentorium with consequent rupture.

Another injury to the skull which is far too frequent in breech extraction is the separation of the squamous portion of the occipital bone from the basal portion with the consequent rupture of the lateral sinuses. This is produced by too much

pull at the time that the occipital bone lies under the pubic arch. The same injury may follow prolonged occiput posterior labors when the head impinges against the sacrum. In this type of injury the infant may die immediately, due to direct pressure on the medulla, or death may be delayed and symptoms of infratentorial intracranial hemorrhage may appear. These infants as a rule are apneic, very pale, and limp.

Subdural hemorrhages are divided into two main types, depending upon the locality of the hemorrhage and the consequent hematoma. If the hematoma is located above in the cerebral cavity, it is called the supratentorial hemorrhage; if it is located below in the cerebellar fossa, it is called the infratentorial, since the tentorium is the dividing structure between these two cavities. If the hemorrhage is extensive enough, it may be in both cavities and the resulting symptoms may be of a mixed type. The symptoms of supratentorial hemorrhages are marked restlessness of the infant, a high pitched cry, failure to nurse properly, and increased tension of the anterior fontanel, together with a spasticity of the extremities. When the hematoma is located below the tentorium, we have another group of symptoms which are marked apathy, moaning cry, interference with the respiratory center, (as evidenced by irregular breathing, and cyanotic spells) and rigidity of the neck muscles. Symptoms of intracranial pressure appear late, if at all.

Ventricular hemorrhages are the result of the same mechanical factors as those of the dura, except that the vein of Galenus or its branches is ruptured, which allows the blood to enter the ventricles. Profuse oozing may be found in the ventricles of those infants born of mothers who are toxic or septic, due either to increased fragility and permeability of the capillaries or to small thrombi causing stasis in the choroid plexus.

The most usual peripheral nerve injuries are those to the facial nerves and the brachial plexus. The facial nerve injuries are practically always due to pressure of the forceps blades in the region of the external ear. This is not a serious condition if the pressure has not been applied too long and if the area is sufficiently pinched and massaged immediately after the birth to re-establish circulation. The massage should be repeated every two or three hours for a period of about twelve hours. Brachial plexus injuries—Erb's paralysis—are due to traction on the shoulder tearing the nerve roots of the fifth, sixth or seventh cervical nerves. As a rule only the neurons are severed, and the sheath remains more or less intact. If undue pull is not exerted

when the shoulder is still behind the pubic bone in a vertex presentation or when the head is still in the birth canal in a breech extraction, practically all of these injuries may be avoided. Occasionally the nerve roots are injured when an attempt is made to bring down an arm which has extended up the side of the head in a breech extraction or more frequently following a podalic version with extraction. When the condition is present, the vast majority recuperate if the arm is held in extension above the head for a period of two or three weeks.

Any of the bones or joints of the body may be fractured or dislocated by rough handling during labor. Fractures of the clavicle or the humerus are the most frequent. Fractures of the clavicle may be spontaneous or due to difficult extraction of the shoulders. It is of no consequence and heals spontaneously without treatment unless there is a brachial plexus injury. Fractures of the humerus are the result of manipulation of the arms during breech extraction. Dislocation of the hip joint is due to hooking the finger into the groin when trying to aid a breech delivery. This procedure is unnecessary as well as undesirable. Traction on the legs after they are delivered instead of on the pelvic girdle may also cause a hip dislocation.

In conclusion let me say that if we will use gentleness and thought in deliveries, whether vertex or breech presentations, we shall not have so many injuries to the child, and there will be fewer neonatal deaths and permanent injuries.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

MESENTERIC THROMBOSIS

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Mesenteric thrombosis is a catastrophe which may happen to anyone. Cases are reported at almost every age. At times it strikes people in apparently good health. The cause, whatever it may be, is very often obscure. The entity is quite rare, but perhaps not as unusual as was formerly believed. During the past ten years there have been five cases at the Finley Hospital, in a series of 500 autopsies.

DISCUSSION

Etiology: The incidence is about equal in the sexes, the white race is involved most, and the majority of cases occur in individuals between thirty and seventy years of age. Our review of the literature indicates that there is no single cause and a variety of factors is generally involved. These may be classified roughly as anatomic and physiologic, pathologic, mechanical, and traumatic.

The first factors, the anatomic and physiologic, have been variously discussed. Trotter compared the superior and inferior mesenteric vessels in this manner: "The superior mesenteric artery is much larger than the inferior, runs parallel to the abdominal aorta, serves a segment which is ten times longer than that nourished by the inferior and has such poor collateral connections that in a physiologic sense it must be considered an end-artery. The inferior originates distally, anastomoses freely and forms an acute angle with the aorta which is supposed to afford a measure of protection against embolic obstruction." The superior mesenteric artery is involved in about 60 per cent and the vein in about 40 per cent. The inferior mesenteric artery is very rarely involved. Blood pressure in the terminal arcades is low and circulation is largely dependent on peristaltic movement.

The pathologic causes are, briefly: first, cardiovascular: endocarditis, arteriosclerosis, mitral stenosis, and atheromatosis; second, infectious: appendicitis, pelvic inflammatory disease and abscesses, and any infection in the region drained by the mesenteric vein; third, mechanical: carcinoma, cirrhosis, adhesions, strangulated hernias and various abdominal tumors; and fourth, traumatic: injuries to the abdomen and various abdominal operations (splenectomy for splenic anemia is cited frequently). Green reported that in his four cases each had previously undergone prolonged fatigue and emotional strain, and had an unhealthy state of the gastro-intestinal tract.

Pathology: Arterial occlusion is generally sudden and embolic, and venous occlusion is slower and thrombotic. In arterial occlusion the venous supply of that part immediately drops to nil. The sudden anemia produced by an acute blockage of a branch of the artery sets up so violent a spasmotic contraction of the bowel musculature that the part becomes isolated from the neighboring circulation, the area becomes overloaded with blood and a hemorrhagic infarct forms. In venous occlusion the pathology is evident. Venous thrombosis may start in the fine venous radicles adjacent to the bowel or may originate in the portal vein, but progression of the thrombosis is

the rule. The part affected is thickened, dark red to almost black in color, and soon becomes gangrenous. The entire bowel wall is engorged with blood, the mucosa is necrotic and may be ulcerated. The lumen contains thick, tarry blood. The mesentery is thickened and may present hemorrhagic patches. The peritoneum contains bloody fluid and there may even be a general peritonitis. The intestine is cyanosed, plum-colored and soggy, as Loop described it, with glistening peritoneum free from adhesions. Its lumen is relaxed (not distended) to large caliber. It lies inert within the abdominal cavity, with no tendency to crowd out of the incision, held down by the weight of the fluid in its lumen, but containing little gas. The mesentery forms a thick doughy mass, dragging down over the pelvic brim as though adherent. Several cases have been reported in which there was apparent spontaneous recovery from mesenteric occlusion through collateral circulation. Klein speaks of an "intermittent mesenteric claudication" produced by repeated incomplete blocks which may eventually terminate in infarction.

Diagnosis: Wangenstein emphasizes the fact brought out by Jackson, Porter and Quinby that many of these cases run a fairly mild course, and that the number of cases running a course of more than eight days is about the same as those running a shorter course. The usual manifestations of the disease are a sudden attack of severe, colicky abdominal pain which may be entirely out of proportion to the physical findings, followed by vomiting and constipation or diarrhea. The temperature is subnormal and often the patient is in shock. The pulse is markedly accelerated and a leukocytosis in the neighborhood of 25,000 is usually present. Occasionally the stools and vomitus contain tarry blood. Distention, rigidity and tenderness are frequently present. It is very important, according to most authors, to find a source of an embolism, or adequate cause of the mesenteric venous thrombosis. However, the really important thing, as Wangenstein has emphasized, is to recognize that a surgical lesion demanding laparotomy is present.

Prognosis: In the past the mortality rate has been around 95 per cent. However, during the last few years more cures have been reported than before, and it is believed that with a more general recognition of the disease, and perhaps earlier operations, the mortality rate will be improved.

Treatment: The treatment is surgical. Successful operations have been done in the face of seemingly hopeless odds. Meyer resected 230 centimeters of small bowel and performed a lateral

anastomosis on a patient whose pulse could not be obtained before operation or for fourteen hours after. Mitchell operated on a moribund patient without anesthesia and prompt recovery followed resection. Dunphy and Zollinger state that the highest percentage of recoveries follow cases with immediate anastomosis, since this affords a smoother and more rapid convalescence. Resection should include all of the diseased area of the bowel and mesentery, and as far beyond as is necessary in order to obtain free bleeding from the severed structures. Failure to remove sufficient mesentery may permit the thrombosis to spread. Jones reported a patient, apparently on the road to recovery, who suddenly developed abdominal pain on the sixth postoperative day and died within fourteen hours. Autopsy revealed an extension of thrombosis with resulting gangrene. Postoperative treatment includes blood transfusion, morphine freely, nothing by mouth until peristalsis is established, maintenance of water balance, and siphon drainage of the stomach.

CASE REPORT

The following case report is selected as most typical of the condition in our series. The patient, a white boy, fifteen years of age, was admitted to Finley Hospital in a moribund condition and the following history was obtained from his physician. One week before his admittance the patient had had a chill. His pulse was rapid and the temperature ranged from 103 to 105 degrees for three days. He had a slight cough and a diagnosis of influenza was made. The fourth day his temperature was normal all day but rose to 100 degrees in the evening. On the fifth day his fever rose to 104 degrees and the pulse ranged from 100 to 130 per minute. His bowels moved well following an enema. On the morning of the sixth day he developed a sudden, severe, sharp pain in the left iliac region. His temperature was subnormal. He was unable to retain anything by mouth and was nauseated all day. He was given an enema without results. At 4:00 p. m. he went into collapse. His pulse then was 140, his skin cold and clammy, the temperature 95 degrees, and the white blood count was 28,600. He was sent to the hospital two hours later.

Physical examination revealed a boy fifteen years of age with cold clammy skin, in a moribund condition. The left lung was clear; the right lung had a few moist râles and an impaired percussion note. The abdomen was markedly distended and tympanitic throughout. The transverse colon was visible across the abdomen. No dullness was found in the abdomen, and a rectal examination was negative. No urine was ob-

tained per catheter and an enema was returned clear. Operation was performed under local anesthetic. On opening the peritoneal cavity considerable seropurulent fluid escaped, and the peritoneum was granular and injected especially in the lower half of the cavity. Almost the entire small intestine was dilated, dark red and filled with fluid. The patient began to fail rapidly and a hurried cecostomy was done. Almost a gallon of foul, dark bloody fluid was immediately drained through the opening. The patient became progressively worse and died twelve hours later.

Autopsy by Dr. McNamara revealed, in addition to peritonitis with ascites, infarction of the ascending and transverse colons and thrombi in the superior mesenteric artery and vein. The inferior mesenteric vessels were not involved and the descending colon was normal. The right lung had a fibrinous exudate over the lowest lobe which was consolidated throughout. The remainder of that lung and the left were irregularly congested throughout and there was a little purulent material in the bronchi. The other organs showed only acute congestion. The iliac vessels contained only postmortem clots of blood. The anatomic diagnosis was:

Primary: Influenzal pneumonia of lobar type; thrombosis of superior mesenteric artery and vein; hemorrhagic infarction of a portion of the jejunum, all of ileum, vermiform appendix, ascending and transverse colon, gangrene of large intestine; and peritonitis with ascites.

Subsidiary: Bilateral syndactylism; adhesions between gallbladder, stomach and loops of small intestine.

ANALYSIS OF CASES

The series is too small to be of great value in a statistical way, but there are several common points that may be emphasized. In each patient the onset of severe pain was sudden. In four cases it was located in the abdomen at various points; in one it started in the back. All patients had a subnormal temperature (95 to 97 degrees), all were nauseated and four vomited. All were constipated. The average white count was 23,500 and four of the patients were in frank shock on admission. Three of the patients were operated on, two were treated by supportive means because of their extremely critical condition. All died. A definite predisposing cause was difficult to determine in all cases. One patient had an old pelvic inflammatory disease and had been intoxicated the night before. One had a decompensated, dilated heart with evidences of chronic passive congestion. The patient in the case cited had influenzal pneumonia which probably played a rôle

in the development of the thrombosis, but another was in apparent good health. The last patient was merely obese. It seems to us from this small investigation that, although all authors demand a predisposing cause for thrombosis or source of an embolus to make a preoperative diagnosis, the establishment of a preoperative diagnosis any more definite than that of acute surgical abdomen is unnecessary.

SUMMARY

1. A brief survey of the recent literature of mesenteric thrombosis is presented.
2. A variety of factors are involved in the etiology of this disease.
3. The most important points in the diagnosis are: acute abdominal pain with a paucity of physical findings, high leukocytosis, high pulse rate, subnormal temperature, nausea and vomiting, either constipation or diarrhea, and often surgical shock.
4. The prognosis is bad.
5. The treatment is immediate operation with resection when possible.
6. Close attention to details of postoperative care and supportive treatment is essential.
7. The disease is not extremely uncommon and should be seriously considered in the differential diagnosis of acute abdominal conditions.

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ANNUAL CLINIC, COLLEGE OF MEDICINE, STATE UNIVERSITY OF IOWA

Clinics, demonstrations and lectures will be held in the Medical Amphitheater on Thursday afternoon, November 10, from 1:30 to 4:30, and on the morning of Friday, November 11, from 9:00 to 12:00. Subjects included are fractures of the arm, head injuries, and varicose ulcers. There will be a demonstration of a prenatal examination and symposia will be held on diathermy, the Pavex machine and on sulfanilamide therapy.

On Thursday evening, November 10, at 6:30, a social and dinner hour is scheduled at Iowa Memorial Union. Entertainment will be provided. The profession is cordially invited to attend both the scientific sessions and the dinner. Dr. H. P. Smith is chairman of the committee on arrangements.

STATE DEPARTMENT OF HEALTH

Walter L. Diering

PNEUMONIA DEATHS, CASES AND TYPES

Pneumonia in all its forms causes many more deaths than any other acute infectious disease. Death records filed by the Division of Vital Statistics of the State Department of Health, indicate that during the five-year period 1933-1937, deaths in Iowa resulting from lobar pneumonia, bronchopneumonia and other unspecified forms of pneumonia, exceeded 9,000.

Pneumonia Deaths in Iowa:

The following table (Table I) shows the annual number of pneumonia deaths and the rate per 100,000 population in Iowa for the five-year period 1933-1937 and the first six months of 1938:

TABLE I
PNEUMONIA DEATHS IN IOWA
1933-1938 (first six months)

Year	Number	Rate per 100,000
1933.....	1482	59.7
1934.....	1787	72.0
1935.....	1964	79.1
1936.....	2098	83.9
1937.....	1737	70.4
1938 (first six months).....	947	

Reporting of Pneumonia Cases:

Although Section 6 of Rules and Regulations of the State Department of Health lists pneumonia as one of the reportable diseases, the reporting of cases has been very incomplete in past years. This is evident from the following table (Table II) which shows the total number of cases of pneumonia officially reported to the State Department of Health during the five-year period 1933-1937 and the first eight months of 1938:

TABLE II
REPORTING OF PNEUMONIA CASES IN IOWA
1933-1938 (first eight months)

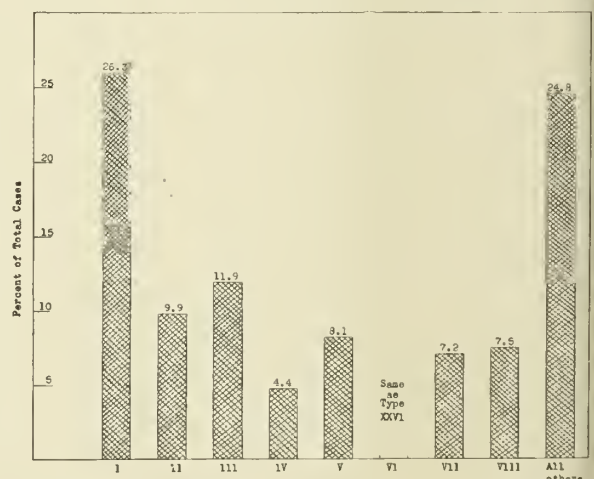
Year	No. of Cases
1933	55
1934	232
1935	278
1936	202
1937	542
1938 (first eight months).....	427

Since adequate reporting presents a primary basis for the control or prevention of any communicable disease, it is necessary that figures be available in Iowa which will represent more nearly the actual prevalence of pneumonia in this state. Of particular urgency is the need for prompt reporting to local health officials and to the State Department of Health of all acute cases including, insofar as possible, the type of pneumonia as demonstrated by the Neufeld method.

Types of Pneumonia:

In an article entitled "Pneumonia Control in Iowa," printed in the September number of the JOURNAL, pages 456-457, reference was made to an article by Plummer which appeared in the August 20 issue of the *Journal of the American Medical Association*, pages 694-699. The accompanying diagram (Figure 1) is based on Table I

Figure 1.
TYPES OF PNEUMOCOCCIC PNEUMONIA



Showing Types of Pneumonia in a series of 6,545 cases, as determined by the Neufeld Method (adapted from Plummer).

of Plummer's article and shows the percentage distribution of various types of pneumonia in a series of 6,545 cases. It will be noted that one-fourth of all cases of pneumococcal pneumonia

are classified as Type I, as determined by the Neufeld technic. Types I to VIII inclusive, comprise three-fourths of all cases of pneumococcic pneumonia and Types IX to XXXII inclusive, the remaining 25 per cent.

Figure 1 is based on a large series of cases studied by Bullowa, Finland and others. Complete reporting of pneumonia in Iowa from the many hospitals and other laboratories now equipped to employ the Neufeld method, affords the opportunity to gather valuable data pertaining to the incidence of the various types of pneumonia in this state.

REPORTING OF SYPHILIS IN 1938

Syphilis cases, as reported to the State Department of Health during the first eight months of 1938 and totaling 2,371 cases, are represented by the heavy black line in the accompanying graph (Figure 2). Reporting of syphilis by months in 1936 and 1937, is also shown in this graph. Reported cases totaled 1,295 in 1936 and 3,627 in 1937.

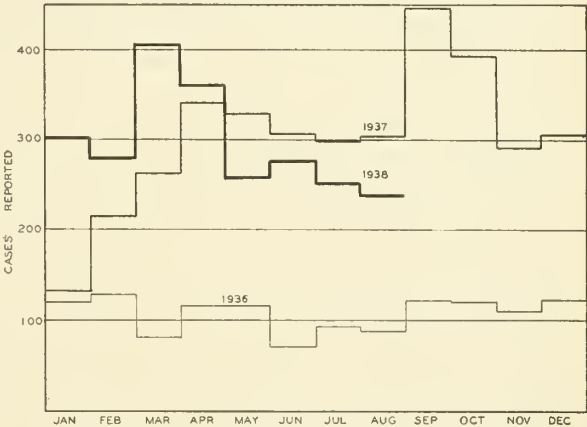
The improvement in reporting in 1937 as compared with the preceding year, 1936, is quite startling. The high peak reached in March, 1937, is doubtless due to the fact that free antisiphilitic drugs were made available at that time. It is likely that some of the cases which were reported to the State Department of Health in 1937, had been under the care of attending physicians for some months prior to the date of report. The comparatively high level of reporting in September, 1937, reflects the inauguration of free serologic tests at the State Hygienic Laboratory, beginning July 1, of last year.

The reporting of syphilis in 1938 as indicated in Figure 2 represents for the most part, new cases brought to the attention of physicians for the first time. The February-April peak in 1938 reporting is best explained as a response on the part of the physician to letters from the State Department of Health urging the reporting of known cases so diagnosed in the State Hygienic Laboratory at Iowa City.

It is probable that the present level of cases reported per month represents a more accurate picture as to the incidence of syphilitic infection in the population of Iowa than that of 1937. The average case reported at the present time is usually

a new case, and not one that has been under a physician's care for some time, and then reported in order to obtain free antisiphilitic drugs. It is an accepted fact that there are still many doctors in Iowa who do not report their cases of syphilis to the Health Department, either because they

Figure 2.
IOWA SYPHILIS REPORTING BY MONTHS 1936-37-38



are unaware of such a procedure existing, or because of fear that obviously confidential information will be publicly divulged. The latter attitude is to be discouraged, for all venereal disease reports are used in the light for which they were designed, namely, to study the incidence and trend of venereal diseases in the people of Iowa.

The State Department of Health enlists the continued interest and support of physicians throughout the state in efforts to bring about complete reporting of cases of syphilis and other venereal diseases in Iowa.

PREVALENCE OF DISEASE

	Aug. '38	July '38	Aug. '37	Most Cases Reported From
Diphtheria	18	7	5	Black Hawk
Scarlet Fever	62	75	71	Polk, Cerro Gordo
Typhoid Fever	35	13	22	Boone, Polk
Smallpox	10	41	16	Polk
Measles	60	286	20	Woodbury, Cerro Gordo
Whooping Cough ..	134	102	130	Woodbury, Linn, Clayton
Epidemic Meningitis	5	1	1	Linn
Chickenpox	9	37	10	Black Hawk, Grundy
Mumps	45	11	8	(For State)
Poliomyelitis	11	4	37	Webster
Rocky Mountain Spotted Fever ...	1	3	0	Boone
Tuberculosis (Pulmonary)	29	76	44	(For State)
Undulant Fever	25	7	14	(For State)
Gonorrhea	195	177	238	(For State)
Syphilis	235	252	304	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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SUBSCRIPTION \$3.00 PER YEAR

Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII OCTOBER, 1938 No. 10

SPECIAL SESSION OF THE HOUSE OF DELEGATES IN CHICAGO

No one who attended the special session of the House of Delegates of the American Medical Association called at Chicago on September 16 and 17 for the purpose of considering the National Health Conference Program, could help but be impressed by the earnest desire on the part of every delegate present to find the best solution possible to the many critical problems which have recently arisen to confront medical practice in this country. That they succeeded beyond expectation is attested by the fact that the final recommendations were adopted by a unanimous rising vote.

If there be those who entertain the notion that this was but a "yes men's" conference, called to ratify cut and dried resolutions formulated behind closed doors by a few of the elect, let them be disillusioned at once; for if ever conclusions were reached by a democratic process, such obtained on this occasion. The 110,000 members of the medical profession may be justly proud of the accomplishments of their spokesmen at this important meeting. The JOURNAL is convinced that the great body of the medical profession can and will unite solidly behind the final recommendations adopted by the House of Delegates, and will do its utmost to carry these views to the people and to public officials responsible for legislative enactment.

The session was opened with addresses by the Speaker of the House, the President and the President Elect, and with a statement by the Board of Trustees. Of particular excellence was the address by President Irvin Abell. It is published in full, along with other details of the session, in the *Journal of the American Medical As-*

sociation, issue of September 24. It should be read by every physician. To those whose faith may have been shaken in the applicability of the guiding principles of medical ethics today, it should act as a restorative; to those who have misgivings as to the Association's willingness and ability to adjust its policies to meet changing needs, it should inspire confidence; but above all, it should convince everyone that the American Medical Association intends to defend by every means at its command those principles and policies which it believes to be right. Consider for instance, these thoughts quoted from Dr. Abell's address. "The principles of ethics by which we have been governed since the organization of the American Medical Association have been criticized as being obsolescent and antiquated. It is readily admitted that its underlying principles are ancient, but it is submitted that they are the only ones, whether in the ethics and economics of medicine or industry, that have stood the test of time. The medical profession by principle and tradition is committed to the idea that the prime object, the standard of value and the social reason for its existence are all one thing—the service it can render humanity. That service is further interpreted as the maintenance of health and the postponement of death. Whatever plan is proposed with regard to medical care is automatically tested and accepted or rejected by the profession in relation to its influence on the morbidity and mortality of the community or communities affected." * * * "American medicine fears political bureaucracies. It fears the acceptance of European models which have been set up by various so-called philanthropic foundations in an attempt to socialize medical practice in this country. The medical profession of this country wishes to keep the practice of medicine within the medical profession. It does not conceive that any political agency can do the job with one-tenth the efficiency at ten times the cost." * * * "The American Medical Association has not opposed insurance against the costs of sickness, of disability, of unemployment, of old age or of death. It does oppose any interference by any outside agency—commercial, governmental or otherwise—into the relationship between doctor and patient which is fundamental in good medical care." * * * "The principles and policies which we have thus far established do not forbid, nor have they ever contemplated any opposition to, a well considered, expanded program of medical service when the need can be established."

The statement of the Board of Trustees explained the purpose of calling the House together at this time. It pointed out that the program

presented before the National Health Conference at Washington last July is a plan for the gradual expansion of medical and public health activities in the United States during the next ten years, and that in all probability the proposals made would be embodied in legislation to be submitted to the National Congress when next it convenes. Since the House of Delegates would not meet in regular session until after this time, a special session became necessary. Only twice before in the history of the American Medical Association have special sessions been called—once when the country was at war, and a second time when the Social Security Act was first proposed to Congress. The statement from the Board of Trustees also mentioned the pending suit of the Department of Justice against the American Medical Association, and disposed of the matter as follows: "The American Medical Association welcomes investigation by any authorized agency of the nature of its organization, of its methods of work, of the conduct of its affairs and of its activities, firmly reliant on the belief that every action taken by the Association has been in accordance with its constitutional organization in the interest of the public welfare, and for advancing the standards and quality of medical service for the American people; and that at no time has it violated the established law of the federal, state or municipal governments of this country." In the opinion of your editor, no stronger or more dignified answer could have been made to the unjust charges brought forth by the Department of Justice.

The task before the House, then, was to determine the views of the medical profession in relation to the proposals of the National Health Conference, and to set forth alternative proposals or other policies for meeting the medical needs of the nation, originating in the medical profession itself. Some interest attaches to the method of committee organization adopted by the House for conducting its work. It will be recalled that the National Health Conference Program consisted of five main recommendations. Briefly, these have to do with first, the expansion of public health and maternal and child health services; second, the expansion of hospital facilities; third, the medical care for the medically needy; fourth, a general program for medical care; and fifth, insurance against loss of wages during sickness. Five reference committees of five men each were appointed by the Speaker, and to each committee was assigned the detailed consideration of one of these five recommendations. The chairman of the five subcommittees constituted a sixth committee whose special function was to coordinate and condense into a final report the recommenda-

tions of the other five groups. Thus all resolutions, proposals and plans introduced by the various delegates were referred to the appropriate committee or committees for consideration.

One of the dramatic highlights of the session occurred in the afternoon of the first day when three representatives of the National Medical Association, an organization of 5,000 colored physicians, addressed the House. The first speaker stated that their association at its last annual session in August had been visited by some representatives of the federal government who laid before them the federal plan for socialization of medicine in America and urged their participation. The National Medical Association, however, the speaker stated, wanted no part of socialistic medicine and preferred to cast its lot with the American Medical Association in opposition to all such schemes.

Following adjournment of the first day's session, the various reference committees began their deliberations. Authors of resolutions appeared to explain their positions and many had individual opinions or plans to present, but all who wished to be heard were given an opportunity. Several of the committees worked until after midnight and continued their labors early in the morning. These details are mentioned in order to give the reader a clear conception of the democratic processes which motivated the entire proceedings.

The second and last day of the session was largely devoted to a presentation of reference committees' reports. While the chairmen of the five subcommittees were occupied in drafting the final report, a member from each subcommittee read to the House of Delegates for information and discussion, but not for action, the report of his particular division. The final formal report of the Reference Committee was presented by the chairman, Dr. Walter F. Donaldson of Pennsylvania. Since the recommendations embodied in this report constitute the medical profession's proposals for a National Health Program, they should be studied thoroughly by all physicians. The essential points as adopted by the House of Delegates may be summarized as follows:

1. Approve the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the president's cabinet. Approve the program for expansion of public health and maternal and child health services, provided that treatment of disease so far as possible be left in the hands of the private practitioner.

2. Recommend greater use of existing hospital facilities, with expansion only where need can be demonstrated. Recommend payment of the costs

of necessary hospitalization of the medically indigent to existing church and voluntary hospitals.

3. Recognize the principle that medical care of the indigent is a responsibility of the local community supported by tax funds. In poorer communities where local funds are insufficient, need for state aid may arise, and when these fail the federal government may need to provide funds. Recommend the establishment of programs for improvement of food, housing and the other environmental conditions which also influence the health of citizens. Recommend education of the people so that they may take advantage of the present medical service available in this country. Approve the development in each state of a system to meet the recommendation of the National Health Conference that "The rôle of the federal government should be principally that of giving financial and technical aid to the states in their development of sound procedures largely of their own choice."

4. Approve the principle of hospital service insurance, providing these plans confine themselves to hospital facilities and do not include any type of medical care. Approve cash indemnity insurance plans to cover the costs of emergency or prolonged illnesses, providing such plans comply with state statutes and regulations and have the approval of the county and state medical societies in the communities in which they operate. Disapprove strongly of any system of compulsory health insurance. Reaffirm belief in the soundness of the principles of workmen's compensation laws and recommend the expansion of such legislation to provide meeting the costs of illnesses sustained as a result of employment in industry.

5. Unreservedly endorse the principle of compensation for loss of wages during sickness. Attending physician should be relieved of duty of certification of illness and recovery. This function should be performed by qualified medical employee of disbursing agency.

A final recommendation of the Reference Committee was that in order to facilitate the accomplishment of the objectives outlined above, the Speaker appoint a committee of not more than seven physicians representative of the practicing profession, under the chairmanship of Dr. Irvin Abell, to confer with federal representatives relative to the proposed National Health Program. The personnel of the committee appointed is as follows: Dr. Abell, chairman; Dr. Walter F. Donaldson, Pennsylvania; Dr. Walter E. Vest, West Virginia; Dr. H. A. Luce, Michigan; Dr. Fred W. Rankin, Kentucky; Dr. Frederic E. Sondern, New York; and Dr. E. H. Cary, Texas.

Thus medicine has stated its position, frankly and fearlessly. It believes its program to be in the best interests of the people of America. Will it be effective in forestalling the establishment of a socialistic form of bureaucratic medical practice, by legislative edict? Time alone will tell, but the task of pointing out the advantages of this program is in the hands of individual practitioners who must assume their responsibilities in their respective local communities if the true value of such a plan is to be realized.

SPECIAL SESSION OF HOUSE OF DELEGATES OF THE IOWA STATE MEDICAL SOCIETY

Called to a special session by President Arthur Erskine, the House of Delegates of the Iowa State Medical Society convened in Des Moines, Sunday, October 2, 1938. The immediate purpose of the call was to consider the National Health Conference program with special reference to the recommendations adopted by the National House of Delegates in Chicago on September 16 and 17. A special session was deemed advisable to ascertain the reaction of Iowa physicians to the stand taken by the national organization, and further to determine what modifications, if any, should be made in the medical service policies as adopted by the American Medical Association, to meet local medical needs in our state. Throughout the deliberations of medical organizations everywhere, attention has been repeatedly drawn to the impracticability of any one national plan being applicable to all parts of a country so large and dissimilar in so many respects as ours. Local conditions and local needs must be the determining factors in the adoption of any final type of service plans. However, certain broad general principles may be defined for the guidance of local state and county medical units, and this, we believe, was the thought behind the recommendations adopted at Chicago. Certainly it was the manner in which consideration of these recommendations was approached by the Iowa delegates.

President Erskine in his opening address (found on page 503 together with a detailed account of the transactions of this special session) stated the issues involved, forcefully and concisely when he said, "The physician must remain 'the master in the house of medicine.' He must be kept free from political control. If these things can be done, and I believe they can, we have no more reason to fear changes in methods of practice than we have cause to regret the changes we have already seen in our own professional lifetimes." Accepting the fact that the problem of supplying adequate medical service to the underprivileged

does exist, Dr. Erskine stated, "It is our problem and that of the people. We can solve it if we choose, without governmental subsidies, without commercial insurance, without help from the great sociologically minded foundations, and without violation of any established medical traditions." His final admonition to the House of Delegates was, "I believe the time has come when, if you approve, our people should be told that their doctors are not obstructionists, that they are anxious to consider any wise proposal for the improvement of the health of the people, and that they will cooperate with the government or any other agencies in any sound plans which seem to offer a real chance for improvement in the methods of rendering and distributing adequate medical service to all the people. I also believe that, with your approval, the public should be told that the reason for our unanimous opposition to compulsory health insurance under federal control is our conviction that it would ultimately result in lower standards of practice."

Viewed from this standpoint the physicians of Iowa now have a definite medical policy, approved by their elected spokesmen, which can be developed and applied with the assurance that the course charted is in the right direction. We need to summarize here only briefly the main points involved in the action taken by our state delegates. For those who desire more complete information, we suggest the reading of the Technical Committee's recommendation to the Interdepartmental Committee to Coordinate Health and Welfare activities, published in the July 30, 1938, issue of the *Journal of the American Medical Association* on pages 432-454; the proceedings of the House of Delegates of the American Medical Association, published in the September 24 issue of the same periodical on pages 1191 to 1217; and this issue of the JOURNAL of the Iowa State Medical Society which, as previously stated, carries the complete text of the deliberations of our own House of Delegates.

The Iowa House approved the recommendations of the National House for first, a federal department of health with a physician director in the President's cabinet; and second, the extension of public health and maternal and child health services, provided statewide plans for expansion are approved by the state medical societies, and local plans are approved by local county units, and further provided that the field of treatment is left to the private practitioner. The delegates also favored the expansion of general hospital facilities where actual need exists, as may obtain in some of the rural counties in Iowa, but they stressed the importance of greater use of existing

hospital facilities and approved the proposal for payment of existing private and church hospitals for the costs of necessary hospitalization of the medically indigent. It was further recommended that special attention be paid to the need in this state for an expansion of the existing hospital facilities for the care of mental cases.

Approved also were the recommendations of the House of Delegates of the American Medical Association regarding medical care for the medically needy, but the following paragraph was added to meet Iowa conditions. "We recommend that the present so-called Iowa plan, as it varies in the different counties, be continued and adjusted to fit the changing conditions in local counties. We further recommend that the old age group be considered as statutory poor for medical and surgical relief in each county. We further recommend that the medical and surgical relief for the marginal group be determined by local authorities cooperating with the county medical societies, and when so determined the county societies shall carry it under its regular contract for the care of the indigent." Dr. Ernest E. Shaw, chairman of the Medical Economics Committee, voiced the opinion that the problem of supplying medical care to persons on relief in Iowa was on a satisfactory basis and needed only a few minor changes.

Approval of recommendations for two types of aid to the low income group was granted; first, hospital service insurance in Iowa should be extended, and second, study and experimentation with voluntary health insurance plans should be undertaken. Compulsory health insurance under political control was condemned. Finally the House of Delegates voiced its approval of the principle of compensation for loss of wages during sickness, but felt that in each county there should be a Committee of Appeal whose function would be to settle differences of opinion between the patient and the medical employee of the disbursing agency in the matter of certification of illness or recovery therefrom. Perhaps as important action as any taken by the House of Delegates at this special session was the enlargement of the Medical Economics Committee to fifteen members, for the purpose of dividing among several subcommittees the task of making effectual the proposals adopted.

The JOURNAL commends the Iowa State Medical Society which, through its House of Delegates, has taken such prompt and decisive action on these important problems. It portends that the period of inertia is over, that leadership is alive and capable, that what needs doing will be done, and what needs opposing will be opposed.

A NEW THERAPEUTIC AGENT FOR EPILEPSY

The relentless search of the scientist to seek further and not to accept present knowledge as the final word is the key to progress in medicine. Exemplifying this eternal quest is the work of Merritt and Putnam of Harvard University who have searched in a systematic manner for an improved therapy for epilepsy.

These authors encountered many patients with convulsive seizures who were refractory to treatment by the ketogenic diet, the restriction of fluids, and by the administration of barbiturates and bromides. Inasmuch as anticonvulsivant drugs are the most commonly used and probably the most effective type of therapy these workers instituted a plan of study to obtain a drug which would be more potent as an anticonvulsivant agent, but less effective as a sedative. The method of study consisted of the determination of the threshold of convulsions in cats by the application of increasing intensities of interrupted current from an electrode placed in the mouth to one on the hair of the occiput. A large number of well known sedatives and hypnotics, and numerous heretofore unused chemicals were tested to determine which had the highest anticonvulsive effect with the least narcotic action.

As a result of these animal experiments it was found that one of these chemicals, sodium diphenyl hydantoinate, was especially effective in protecting animals from electrically induced convulsive seizures, and that this chemical had only a slight sedative effect. Extensive pharmacologic and toxicologic tests demonstrated that it was well tolerated by laboratory animals. The drug is somewhat analogous to the barbiturates, but is a derivative of glycocyl urea rather than of malonyl urea.

In the *Journal of the American Medical Association*, issue of September 17, 1938, Merritt and Putnam report their experience in the use of the drug in 200 patients for periods varying from three weeks to eleven months. Of 142 patients, grand mal attacks were relieved in 58 per cent and were greatly decreased in frequency in 27 per cent; petit mal attacks were relieved in 35 per cent and greatly decreased in frequency in 49 per cent; and psychic equivalents were relieved in 67 per cent and greatly decreased in frequency in 33 per cent. The dosage for adults varies from 0.2 gram to 0.6 gram daily, beginning with 0.1 gram three times daily and increasing to 0.2 gram three times a day if necessary. The average daily dose was 4.3 grams daily. Minor toxic symptoms occurred in fifteen per cent and consisted of dizziness, ataxia, tremors, blurring of vision and

nausea. More serious toxic reactions occurred in five per cent, manifested by skin eruptions varying from a simple dermatitis to a purpuric eruption, and the authors report one case of exfoliative dermatitis. They warn of the danger of precipitating a status epilepticus if the barbiturates are rapidly replaced by the new drug, and suggest that the former drug be gradually withdrawn over a period of two weeks until a reserve supply of sodium diphenyl hydantoinate has been deposited in the system.

The work of Gibbs and Lanox at Harvard on the use of electroencephalograms is another contribution to the knowledge of epilepsy. These authors define epilepsy as "a disorderly functioning of the rate-regulating mechanisms of the brain," and designate it "a paroxysmal cerebral dysrhythmia." Studies of over 400 patients indicate that grand mal epilepsy is characterized by extreme acceleration of the electric conductivity of the cortex, and that petit mal is characterized by an alternation of fast and slow activity. Electroencephalography has shown that the brain is the seat of constant rhythmic activity, similar in activity to the respiratory center and the sinoauricular node. Epilepsy then is a disturbance of the rhythmic activity of the brain.

It is encouraging and stimulating to witness systematic, scientific study of a disease heretofore poorly understood and unsatisfactorily treated. The use of sodium diphenyl hydantoinate, marketed under the trade name "dilantin" would seem to be indicated for those patients who have not responded to the more common forms of therapy.

INCREASED COMPENSATION FOR MEDICAL RELIEF*

There are still seventeen counties in Iowa where, because of the size of the relief load and the financial condition of the counties, state aid is being received in carrying out the medical program for the relief clients. Of these counties, seven are known as "special state fund counties," and receive assistance for both the unemployment relief and the regular county relief cases. The other ten receive funds for the unemployment relief only. About September 1 these counties were notified that beginning October 1 there would be a change in the manner of conducting the program, since the state administration desires to decentralize the relief work as far as possible. In line with this procedure the medical program is to be carried out locally with no audit of bills in the state office.

The state relief committee, after consideration of the problem, decided to pay medical grants on

*Prepared by the Medical Economics Committee.

the basis of \$1.80 per month for unemployment cases and \$2.20 per month for regular county cases. In addition, twenty cents per month per case was allowed for dental care, a twenty per cent increase over the amount allowed during the last few years. At the request of several of the counties a meeting was held in Des Moines on September 20, with representatives of twelve counties present. After considering the various factors involved, and after examining in detail the reports of relief medical expenses in several counties during the last three years, it was decided to ask the state committee for a further increase in the allowance for medical care.

A committee was appointed from those present at this meeting, and on September 26 these members met with the medical committee of the state relief administration. The recommendations of the meeting of September 20 were presented, together with the reasons for considering these recommendations fair to both the relief administration and the medical profession. After an hour's discussion the committee from the administration offered to present these requests to the state relief committee and to recommend their adoption. The reception of our committee by the group from the state administration was very cordial, and there was no effort on their part to prevail upon us to reduce our requests. The committee left the meeting feeling that it would be well represented by these men, and that the medical viewpoint would be presented favorably by them to the state committee.

On September 28 the members of the state relief committee met and informed the Medical Economics Committee that they had agreed to allow the sum of \$2.00 per month for unemployment relief cases and \$2.50 per month for regular county cases where the medical grant was furnished by the state. This is a very satisfactory allotment, and with careful administration by the county medical relief committee should pay the bills for the relief work on the reduced fee schedule in full. In addition to the amount allotted, the state committee had previously offered to allow any unused funds during light months to accumulate, so that they might be used by the medical committee in later months when there might be a heavier medical load. After the plan has been in operation for a short time sufficient funds will undoubtedly accumulate to carry, without any cut, the medical relief load during months when there is an unusually heavy demand.

It was almost impossible for all the counties to get their contracts in by September 28, considering the late date on which the decision was made, and those who did not will receive the old allot-

ment of \$1.50 and \$2.00 per case, as they did in September. However, the new amount will be available in November after the county contract with the board of supervisors has been approved by the central relief committee.

MEDICAL ECONOMICS BUREAU TO BE EXPANDED*

With the conduct of the study of medical care by the American Medical Association, and with the immense amount of material coming under the head of medical economics in the discussion of the proposals of the National Health Conference, the Bureau of Medical Economics of the American Medical Association has been unable to meet the demands put upon it. At the recent special session of the House of Delegates of the American Medical Association, a recommendation was made and approved to the effect that "It is the sentiment of this House of Delegates that it would heartily approve of an action by the Board of Trustees looking toward the sensible expansion of the Bureau of Medical Economics to accommodate the immediate and growing demand."

County societies throughout the United States have been besieging the Bureau for information regarding the survey, state medicine, data as to the various state and insurance schemes in Europe, and material for use in talks to professional and lay groups. The Bureau of Medical Economics is to be congratulated upon the fine work it has been doing in responding to these calls. However, Dr. Leland, chairman of the Bureau, stated at the previously mentioned session, that he had many calls for men to go to different state and county societies to give them information and assistance in their individual problems, but due to a lack of personnel he was unable to fill many of the requests. It is hoped that the Board of Trustees will sufficiently enlarge the Bureau to allow it to carry out even more completely the program it has undertaken.

FIRST ANNUAL MEETING, IOWA INTERPROFESSIONAL ASSOCIATION

Waterloo, Iowa, Masonic Temple, October 12, 1938

The first annual public health program of the Iowa Interprofessional Association is to be held in connection with the annual meeting of the Iowa State Association of Registered Nurses at the Masonic Temple in Waterloo on Wednesday afternoon, October 12, at two p. m. The Iowa Interprofessional Association is supported by the five professional state societies of medicine, dentistry, nursing, pharmacy, and veterinary medi-

*Prepared by the Medical Economics Committee.

cine. The major part of the program will be devoted to a consideration of the National Health Program formulated by President Roosevelt's Interdepartmental Committee. This is attracting much public attention and is of particular interest to the professions. It is hoped that a large representation of the five interested groups will attend this meeting. The speakers are particularly well qualified to develop the subjects assigned to them. Professor Gaskill as Dean of Industrial Science at Iowa State College has done much in the integration of the professions in the basic sciences. Dr. Waller is a member of the Technical Committee which drew up the program, and is thoroughly conversant with all phases of it. Monsignor Griffin is a member of the Board of Directors of the American Hospital Association, and will discuss the program from the standpoint of the hospitals.

R. D. Bernard, M.D., of Clarion, president of the Iowa Interprofessional Association, will preside over the following program:

"Mutual Interests of the Professions in the Basic Sciences," H. V. Gaskill, Ph.D., Dean of Industrial Science, Iowa State College, Ames, Iowa.

"A National Health Program—A Review of the Program Recommended by President Roosevelt's Interdepartmental Committee to Coordinate Health and Welfare Activities." C. E. Waller, M.D., Assistant Surgeon General, United States Public Health Service, and member Technical Committee on Medical Care, Washington, D. C.

"National Health Conference and the Present Hospitals." The Rt. Reverend Monsignor Griffin, member Board of Directors, American Hospital Association, Cleveland, Ohio.

SECOND ANNUAL FRACTURE CLINIC

The Second Annual Fracture Clinic will be held in the south Ball Room of the Hotel Fort Des Moines in Des Moines Thursday, October 20. Every physician in Iowa is invited to attend this all day clinic, which should be most interesting to general practitioners. The morning session is to be devoted to a presentation of cases, showing the after-results of treatment, with a discussion by the surgeon of the method used, and a showing of preoperative and intermediate x-rays. The afternoon will be given over to addresses by three speakers, with time allowed for questions, both of the morning and afternoon speakers. The program will include the following:

Morning Session—9:30 A. M.

Arthritis Associated with Fractures—W. E. Wolcott, M.D., Des Moines.

Fractures of the Hip, Blind Nailing—D. C. Wirtz, M.D., Des Moines.

Fractures of the Spine—Ambulatory Treatment—Lewis M. Overton, M.D., Des Moines.

Patellar Injuries—Douglas N. Gibson, M.D., Des Moines.

Luncheon—12:00

Afternoon Session—2:00 P. M.

Emergency Treatment of Compound Fractures—J. A. Key, M.D., St. Louis.

Fractures of the Forearm, J. E. M. Thomson, M.D., Lincoln.

Emergency Treatment of Head Injuries—Walter D. Abbott, M.D., Des Moines.

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION PROGRAM IN PHILADELPHIA

Attention is again directed to the International Assembly of the Interstate Postgraduate Medical Association of North America, which will be held in Philadelphia from October 31 through November 4. As usual the morning and early afternoon sessions will be devoted to diagnostic clinics, while the late afternoon and evening hours will be spent in addresses, delivered by the many distinguished visiting physicians and surgeons. The tentative program of essayists and their subjects, includes the following:

Practical Thyroid and Pituitary Therapy in Problems of Aberrant Growth and Development—Dr. E. Kost Shelton, Los Angeles, California.

Syndromes of Gallbladder Disease, Surgical Management—Dr. William D. Haggard, Nashville, Tennessee.

The Therapeutic Value of Blood Transfusions—Cyrus C. Sturgis, Ann Arbor, Michigan.

The Surgical Management of Brain Tumors—Dr. Alfred W. Adson, Rochester, Minnesota.

Obscure Fevers as Diagnostic Problems—Dr. George Blumer, New Haven, Connecticut.

Treatment of Fracture Dislocations of the Cervical Vertebrae by Skeletal Traction and Fusion—Dr. William G. Turner and Dr. William Cone, Montreal, Quebec, Canada.

Complications of Pregnancy—Dr. Nicholson J. Eastman, Baltimore, Maryland.

Acute Pancreatitis—Dr. Eldridge L. Eliason, Philadelphia, Pennsylvania.

The Factors Influencing Operability and Mortality in Carcinoma of the Large Bowel—Dr. Richard B. Cattell, Boston, Massachusetts.

The Present Status of Our Knowledge of the Suprarenal Cortical Hormone—Dr. George A. Harrop, New Brunswick, New Jersey.

Immediate and Ultimate Prognosis in Heart Disease—Dr. Paul D. White, Boston, Massachusetts.

Diagnosis and Treatment of Bronchogenic Carcinoma—Dr. Arthur C. Christie, Washington, D. C.

Gastroscopy as an Aid in Diagnosis—Dr. Chevalier L. Jackson, Philadelphia, Pennsylvania.

Adenomatous Thyroid With and Without Hyperthyroidism, Medical and Surgical Aspects—Dr. Charles W. Mayo and Dr. Samuel F. Haines, Rochester, Minnesota.

Diagnosis and Treatment of Carcinoma of the Fundus of the Uterus—Dr. Floyd E. Keene, Philadelphia, Pennsylvania.

The Present Status of Our Knowledge of Anterior Poliomyelitis—Dr. John C. Gittings, Philadelphia, Pennsylvania.

The Diagnosis and Treatment of Splenomegaly—Dr. Allen O. Whipple, New York, N. Y.

Neoplasms of the Stomach—Dr. Fred J. Hodges, Ann Arbor, Michigan.

The Use of Spinal Anesthesia—Dr. Thomas H. Russell, New York, N. Y.

Hyperpyrexia by Physical Agents—Dr. John S. Coulter, Chicago, Illinois.

Clinical Significance of Hematuria—Dr. William F. Braasch, Rochester, Minnesota.

A Medical Appraisal of the Surgery of Pulmonary Tuberculosis—Dr. William S. Middleton, Madison, Wisconsin.

The Clinical Use of Sulfanilamide in Infectious Diseases—Dr. Perrin H. Long, Baltimore, Maryland.
Acute Appendicitis—Dr. George P. Muller, Philadelphia, Pennsylvania.

Injuries to the Heart, Stab Wounds and Contusions—Dr. Claude S. Beck, Cleveland, Ohio.

Improvements in Methods of Abdominal Drainage—Dr. W. Wayne Babcock, Philadelphia, Pennsylvania.

Immediate Versus Delayed Surgery in the Treatment of Acute Diseases of the Gallbladder—Dr. Charles Gordon Heyd, New York, N. Y.

The Management of Peritonitis—Dr. Vernon C. David, Chicago, Illinois.

The Object and Value of Preoperative and Postoperative X-ray Treatment in Carcinoma of the Breast—Dr. George E. Pfahler, Philadelphia, Pennsylvania.

Subtemporal Decompression—Dr. Eric Oldberg, Chicago, Illinois.

Relation of Trauma to Inguinal Hernia—Dr. John J. Moorhead, New York, N. Y.

Classification and Treatment of the Epilepsies—Dr. Wilder Penfield, Montreal, Quebec, Canada.

The Clinical Significance of Retinal Changes in Arterial Hypertension—Dr. Walter I. Lillie, Philadelphia, Pennsylvania.

The Prognosis and Treatment of Rheumatic Heart Disease—Dr. Fred M. Smith, Iowa City, Iowa.

Psychotherapy in General Medicine—Dr. Clarence B. Farrar, Toronto, Ontario, Canada.

Pellagra—Dr. John H. Musser, New Orleans, Louisiana.

The Diagnosis and Treatment of Peripheral Nerve Injuries—Dr. Loyal Davis, Chicago, Illinois.

Obstruction of the Neck of the Bladder in Women—Dr. Hugh H. Young, Baltimore, Maryland.

Studies in Growth, Precocious and Malignant—Dr. Leonard G. Rowntree, Philadelphia, Pennsylvania.

Trauma of the Abdomen—Dr. Arthur R. Metz, Chicago, Illinois.

Influenzal Pneumonia—Dr. Robert G. Torrey, Philadelphia, Pennsylvania.

The Treatment of Bronchiectasis—Dr. Edward D. Churchill, Boston, Massachusetts.

More detailed information and a complete program may be secured by writing Dr. William B. Peck at Freeport, Illinois, Managing Director of the organization.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Iowa Interprofessional Association, August 28, 1938

The annual meeting of the Iowa Interprofessional Association was held at the Kirkwood Hotel in Des Moines, Sunday, August 28, with representatives of all five organizations present. The meeting was called to order by the president, R. D. Bernard, M.D., and the annual financial statement was read and approved. A detailed report of the work done since the meeting last September was given by the president, who then asked for instructions as to program material for county meetings in September. This was deliberated carefully, and the final decision was that the National Health program should be discussed when requested. Other program suggestions were also made. A report of the first state interprofessional program, to be held in conjunction with the annual meeting of the Iowa State Association of Registered Nurses at Waterloo, October 12, was given by Miss Alma Hartz, R.N. Each organization then elected a member to serve on the Executive Council; this group met and elected officers for the coming year. R. D. Bernard, M.D., of Clarion, was elected president; E. H. Ford, D.D.S., of Des Moines, vice president; and Walter Meads, Pharm., of Ames, secretary and treasurer.

Meeting of the Council, September 11, 1938

The Council of the Iowa State Medical Society was called to order by the chairman following the Executive Council meeting, Sunday, September 11, 1938, with all members present. Action was taken on a letter from Dr. Peck requesting recommendations from the Council regarding the admission of patients at Oakdale and fees to be charged for various services. Dr. Bush gave a brief report of the Speakers Bureau work and the meeting adjourned at 4:30 p. m.

Meeting of the Fracture Committee, Fort Dodge, Iowa, September 11, 1938

The Fracture Committee of the Iowa State Medical Society met at the home of Dr. Fred L. Knowles in Fort Dodge, Sunday morning, September 11, 1938. Those present were Drs. D. C. Conzett, W. G. Bessmer, K. R. Werndorff, W. E. Wolcott, and the host, F. L. Knowles. The committee reviewed several films dealing with fractures, recommended that three films be purchased and that one be made in Iowa. It then formulated plans for the program of the

annual fracture clinic, which is to be held in Des Moines, October 20.

Meeting of the Board of Trustees September 11, 1938

The Board of Trustees of the Iowa State Medical Society held a brief meeting at noon Sunday, September 11, 1938, with all members present. The request of the JOURNAL that the School of Dentistry of the State University of Iowa be given a free subscription was granted. The request of the advisor to the Woman's Auxiliary that the State Society grant the Auxiliary \$50.00 for its 1939 annual meeting was granted. The contract for printing the JOURNAL of the Iowa State Medical Society was investigated, and after due consideration, was given to the Wallace-Homestead Company of Des Moines for 1939. The Board discussed the payment of back social security taxes, and voted that the Society should be liable for the taxes incurred between January 1, 1937, and April 1, 1938, when the ruling regarding the State Society was changed, making the Society liable. Refunds to those employees who had already paid for those months were ordered.

Meeting of the Executive Council September 11, 1938

The meeting of the Executive Council was called to order by the president, Dr. A. W. Erskine, at 11:15 a. m., Sunday morning, September 11, 1938, in the Green Room at the Hotel Fort Des Moines. Present were: Drs. L. L. Carr, C. H. Cretzmeyer, F. P. Winkler, J. E. Reeder, E. B. Bush, F. P. McNamara, C. A. Boice, C. W. Ellyson, H. A. Spilman, J. G. Macrae, M. C. Hennessy, A. W. Erskine, F. A. Hennessy, O. J. Fay, J. I. Marker, L. R. Woodward, E. E. Shaw, Fred Moore, V. L. Treynor, T. F. Thornton, W. L. Bierring, and R. L. Parker.

Business transacted was as follows: 1. The date of the 1939 annual meeting of the State Medical Society was changed to April 25, 26 and 27. 2. The president was authorized to appoint a Committee on Industrial Health. 3. A summary of the questionnaires regarding the National Health program which had been sent to county medical societies was given by the secretary. 4. The National Health program was discussed. The following eight points were brought out in the meeting:

1. The Iowa State Medical Society is opposed to national mass medical service under the control of politicians.

2. The public and legislators should be informed by an educational campaign of the undesirable features of nationally administered compulsory health insurance.

3. Medical organizations should be encouraged to find, by controlled experimentation, methods of solving the problem of providing adequate medical service to the underprivileged.

4. The suit against the District of Columbia Medical Society and the American Medical Association should be vigorously opposed.

5. We should admit that organized medicine has failed, in some respects, to take advantage of its

opportunities to make changes in the methods of rendering medical service.

6. The organized medical profession should be directing all experimental plans.

7. Group hospital insurance should be encouraged.

8. The members of the Medical Society should receive considerable education on the subject of medical economics.

It was felt that the delegates to the American Medical Association meeting should not be tied down with instructions and no recommendation was given to them. The meeting adjourned at 4:00 p. m.

Meeting of the Medical Economics Committee September 20, 1938

The Medical Economics Committee of the Iowa State Medical Society met at the Hotel Fort Des Moines to discuss a program of medical care for the indigent in seventeen counties now receiving state funds. In attendance were Drs. E. E. Shaw, A. C. Moerke, Channing Smith, Robert L. Parker, and representatives from Appanoose, Clarke, Guthrie, Harrison, Madison, Mahaska, Marion, Monroe, Muscatine, Pottawattamie, Union and Wayne counties. After a discussion of the situation it was moved, seconded and carried that the Committee request the Iowa Emergency Relief Administration to approve a fee of \$2.00 per month per case for unemployment relief and \$2.50 per month per case for regular county relief, these sums to be for medical services only and not to include drugs, glasses or dental services. It was also voted that these funds should be cumulative from month to month. A committee consisting of Drs. B. B. Parker of Centerville, L. F. Catterson of Oskaloosa, C. R. Harken of Osceola, and E. E. Shaw of Indianola was appointed to confer with the Iowa Emergency Relief Administration and report back to the seventeen counties.

The Iowa Adjustment and Credit Bureau of Cedar Rapids received renewed approval of its collection plan.

Meeting adjourned at 4:00 p. m.

Meeting of the Program Committee September 25, 1938

The Program Committee of the Iowa State Medical Society met in Des Moines, Sunday, September 25, at twelve-thirty. Those present included Drs. A. W. Erskine of Cedar Rapids, president; F. A. Hennessy of Calmar, president-elect; Robert L. Parker of Des Moines, secretary; H. J. McCoy of Des Moines, treasurer; Ben G. Budge of Ames, chairman of the medical section; and Frank M. Keefe of Clinton, chairman of the surgical section. Dr. T. R. Gittins of Sioux City, chairman of the eye, ear, nose and throat section, could not attend. Guest speakers for the 1939 annual meeting were discussed, and choices made. The secretary was instructed to invite Dr. Irvin Abell, president of the American Medical Association, to attend the meeting. The section chairmen asked for help in filling in the afternoon program, and the secretary was requested to write the councilors for suggestions.

Meeting adjourned at 5:00 p. m.

TRANSACTIONS OF THE SPECIAL SESSION

Minutes of the Special Session of the House of Delegates of the Iowa State Medical Society Held in Des Moines, October 2, 1938

Sunday Morning

The House of Delegates of the Iowa State Medical Society met in special session Sunday morning, October 2, at ten-fifteen, in the South Ball Room of the Hotel Fort Des Moines in Des Moines. The meeting was called to order by the president, Dr. Arthur W. Erskine, who asked Dr. Wm. C. Goenne, first vice president, to take the chair. Dr. Erskine then delivered his presidential address.

Address of the President

I have asked you, the chosen representatives of the medical profession of Iowa, to come here today to discuss the conclusions of the National Health Conference, the minutes of the special session of the House of Delegates of the American Medical Association, and certain allied matters. I am asking you to consider these things, not only as they apply generally to the health and general welfare of the American people and the American Medical Association, but more particularly as they apply to the public and the medical profession in our own state. It is neither my function nor my purpose to tell you what action you shall take, but I believe I should outline for you the course of events leading to the crisis in the affairs of American medicine which had to be met in Chicago two weeks ago.

In the troubled times through which we have been living it was only natural to expect that the sick should receive consideration at least equal to that given the hungry, the poorly clothed, and the homeless. In the dark days early in the depression there must have been many who cried out in desperation, "Turn thee unto me, and have mercy upon me; for I am desolate and afflicted. The troubles of my heart are enlarged: O bring thou me out of my distresses. Look upon mine affliction and my pain." As the funds of charitable organizations and other local agencies were exhausted it became necessary, in many places, for the county, state, and finally, for the federal government to give medical relief to indigents, and vast sums of federal funds have been spent for this purpose. From that experience two facts emerged which could have been prophesied by any intelligent doctor; first, when medical relief was administered and controlled by politicians and laymen it was inefficient and wasteful; and second, when medical relief for the indigent was under the complete control of medical men it was efficient and economical.

As the depression continued the need for more nearly adequate medical service than they could completely pay for was felt by individuals in the low income group. Various plans for rendering such service on either a local or national scope have been

proposed by politicians, insurance companies, labor unions, employers of labor, the great foundations, sociologists, and social workers. Because many of those plans contained elements contrary to the principles which the medical profession has found to be essential to the welfare of the public, they had to be opposed, and the impression has developed in the minds of the laity that medical men are invariably opposed to all change. Some of the plans were political and designed almost entirely as a bid for votes. I may say, parenthetically, there is now no doubt that the 1940 platform of each party will contain a "health plank." However, not all the plans and proposals for better and wider distribution of medical service have come from outside the organized medical profession. The delegates from the New York Medical Society introduced at the 1937 meeting of the American Medical Association what were known as the "Kopetzky Resolutions" which, after being sent to a reference committee, were tabled. Later a committee of physicians, numbering more than four hundred, presented to the American medical profession the "Principles and Proposals" with which you are familiar. Unfortunately and, I believe, unwisely, the efforts of these men were bitterly opposed by a small, but exceedingly vociferous, group within the ranks of organized medicine. Their efforts were called a revolt against the American Medical Association and they, on at least one occasion, were branded as an "extraneous group." The invective sarcasms employed by some of its employees again placed the American Medical Association in the unenviable and obviously false position in the minds of the public of being obstructively opposed to any change in the methods of rendering medical service.

Last July a National Health Conference was held in Washington, and representatives of the American Medical Association were invited. No definite action was taken, but the lay groups expressed a belief that the government should participate in securing adequate medical care. A report of the Technical Committee on Medical Care to the Interdepartmental Committee appointed in August, 1935, is in your hands. It was to consider this recommended program and one other matter that a special session of the House of Delegates of the American Medical Association was called two weeks ago. The other matter was a situation which arose in the District of Columbia. About 2,500 government employees organized the Group Health Association, Inc., about a year ago to provide prepaid medical care. Physicians employed by the Group Health Association were expelled from the District Society and excluded from Washington hospitals. Other members of the society were forbidden to consult with them.

On July 30, 1938, Thurman Arnold, Assistant Attorney General, announced the intention of the Department of Justice to proceed against the American Medical Association and its affiliated Washington Society under the law designed to prevent conspiracy in restraint of trade. Your officers have not yet been able to determine the exact cause for expelling the doctors employed by the Group Health Association. Dr. Olin West, Secretary and General Manager of the Association, says that the Association has opposed the Group Health Association because it is a corporation engaging in the practice of medicine. On the other hand, Dr. H. C. Macatee says that the sole reason for Dr. Scandifio's expulsion was that he violated a by-law of the local society which provides that all contracts must be submitted to the Society for its approval.

This then was the situation confronting the members of the House of Delegates in Chicago. They faced a crisis unparalleled in the history of the Association, a crisis which, unwisely met, might easily have meant the end of the organization. Three courses lay open to them. They might have listened to those who believe that change is neither necessary nor desirable and have opposed all the proposals of the Interdepartmental Committee. If the entire membership had stood with a united front such opposition might have been successful, but it is apparent that unanimity of opinion among all the members of a profession like ours is impossible, although we can expect, and we can demand, unanimous action based upon the will of the majority. However, there are many doctors who believe changes in our methods of furnishing medical care are desirable and necessary; there are many more who are convinced that changes are inevitable and that it is our function to see that they are wise changes. The second course of action was to abandon completely those principles to which all honorable doctors subscribe, and to the support of which they dedicate their lives. Under this procedure the physicians would supinely accept every proposal, in spite of the fact that they knew some of them would have turned back the practice of medicine to medieval times. To their everlasting credit, they wisely did neither of these things. The first course would almost certainly have resulted in a program being forced upon us which would eventually have reduced the standards of medical practice to the level of those in Central Europe. The second course would have resulted in a hopeless division within our own ranks.

The delegates approached their task in a spirit of conciliation and compromise. Imbued with that spirit they accepted the counsel of a great physician, who once said "Agree with thine adversary quickly, whiles thou are in the way with him—lest at any time the adversary deliver thee to the judge, and the judge deliver thee to the prison. Verily I say unto thee, Thou shalt then by no means come out thence, till thou has paid the uttermost farthing." As you listen to the reports of the Chicago meeting now about to be presented to you, I think you will be surprised, and I know you will be proud, to see how often the

recommendations of the Interdepartmental Committee were approved. You will be equally proud, although you should not be surprised, to see how clearly and convincingly weaknesses and fallacies in the proposals are delineated in the exceptions and reservations. You will honor, as I did, their unselfish devotion to the fundamental principles of the art we serve, when you see how sharply your national representatives differentiated between mass medical service under political domination, a thing we all hate and fear, and mass medical service administered and controlled by medical organizations. The physician must remain "the master in the house of medicine." He must be kept free from political control. If these things can be done, and I believe they can, we have no more reason to fear changes in methods of practice than we have cause to regret the changes we have already seen in our own professional lifetimes.

I need not remind you that you are Iowa physicians, and that your study of these reports should be primarily from the standpoint of citizens of Iowa. The important question to be answered here today is, "How will these proposals affect the people of this state?" Because our population is largely rural, because we have little abject poverty, and almost no illiteracy, and because our people still have a greater degree of confidence in the medical profession than is commonly found in metropolitan areas, it may well be that need for wider and better distribution of medical service is not so great here as in less favored communities. For the same reasons, and because neither we nor our people are driven by the lash of necessity, it may be that Iowa is an ideal laboratory for controlled experimentation in hospital insurance, insurance against catastrophic illness, and in plans for prepaid medical service to members of the low income group by county medical societies. If you think so, say so.

You have already heard me say that I believe the question of providing adequate medical service to those in the low income group is the most important problem now confronting the organized medical profession. It may be true that very few people are "unable" to obtain necessary medical service, but those of you who come in direct contact with the patients know that many men and women fail to get needed medical service because "to beg they are ashamed." Perhaps half of the patients with advanced tuberculosis and advanced cancer have allowed their disease to progress further than they should because, as they say, "Doctor, we didn't have the money." The problem of supplying adequate medical service to the underprivileged does exist. It is our problem and that of the people. We can solve it if we choose, without governmental subsidies, without commercial insurance, without help from the great sociologically minded foundations, and without violation of established medical traditions.

Finally, I have one concrete suggestion to make. It is that when you have formulated your opinion on the matters now to be considered, you issue statements to the public, to the members of the Iowa

State Medical Society, and to the Trustees of the American Medical Association. In my capacity as your president, I have carefully refrained, in the past few weeks, from making any statement to the press because I am not certain that my opinions coincide exactly with yours. I believe, however, that the time has come when, if you approve, our people should be told that their doctors are not obstructionists, that they are anxious to consider any wise proposal for the improvement of the health of the people, and that they will cooperate with the government or any other agencies in any sound plans which seem to offer a real chance for improvement in the methods of rendering and distributing adequate medical service to all the people. I also believe that, with your approval, the public should be told that the reason for our unanimous opposition to compulsory health insurance under federal control is our conviction that it would ultimately result in lower standards of practice.

The members of our society should obviously be fully informed of your actions here today. They should receive an explanation of the reasons for your approval or disapproval of the action of the national House of Delegates. In addition, if you approve, I think the component societies should be encouraged to study carefully conditions in their own communities, and to institute experiments "planned distinctly with a view to securing a wider distribution of medical service and to making more and more medical service available to a greater number of people."

The Trustees of the American Medical Association should be informed of the results of your deliberations, and of the reasons for any possible dissent from the conclusions of the national House of Delegates. They should be told that the Iowa State Medical Society supports their determination to resist the threatened action of the United States Department of Justice. In view, however, of the apparent confusion between the question of ethics and legality in the District of Columbia controversy, it might be well to suggest that a scientifically judicial attitude toward the problem be maintained until the American Medical Association and the District of Columbia Medical Society agree more closely upon the issues involved, and that no further pronouncements be made in regard to it until more factual evidence is collected. It might further be suggested that the welfare of the American medical profession would be advanced if closer supervision were exercised over statements issued from the central office of the Association in order that they may more accurately reflect the opinion of American physicians.

The president then resumed the chair and made the following remarks.

Dr. Erskine: In order to facilitate the work of the House of Delegates, unless objection is raised, I wish to appoint seven reference committees to which the matters and reports shall be referred. These committees will report back to the House of Delegates immediately after the noon intermission

and the matters will be discussed upon the floor and decided by you. I hereby appoint the following committees:

Committee to Consider Reports of Officers: J. G. Macrae, Chairman, Creston; R. S. Shane, Pilot Mount; and E. E. Munger, Spencer.

Committee to Consider Division I on Expansion of Public Health Services: M. C. Hennessy, Chairman, Council Bluffs; V. L. Treynor, Council Bluffs; and John T. Hanna, Burlington.

Committee to Consider Division II on Expansion of Hospital Facilities: H. A. Spilman, Chairman, Ottumwa; Robert L. Parker, Des Moines; and C. R. Harken, Osceola.

Committee to Consider Division III on Medical Care for the Medically Indigent: C. W. Ellyson, Chairman, Waterloo; E. E. Shaw, Indianola; and R. D. Bernard, Clarion.

Committee to Consider Division IV on a General Program of Medical Care: F. P. McNamara, Chairman, Dubuque; H. A. Householder, Winthrop; and J. K. von Lackum, Cedar Rapids.

Committee to Consider Division V on Insurance Against Loss of Wages During Sickness: C. A. Boice, Chairman, Washington; Lee F. Hill, Des Moines; and E. M. MacEwen, Iowa City.

Committee to Consider Miscellaneous Business: J. E. Reeder, Chairman, Sioux City; Fred Moore, Des Moines; and A. D. Woods, State Center.

Upon motion duly *seconded* and *carried*, roll call was dispensed with, the registration being accepted as the official record of attendance.

Dr. Erskine: Is Dr. Moore here? If not, I shall ask Dr. Parker to proceed with Division II on Expansion of Hospital Facilities.

Dr. Parker read the proposed program of the National Health Conference relating to expansion of hospital facilities, and then the recommendation of the House of Delegates of the American Medical Association as of September 17. He also read an article given by S. S. Goldwater in this connection at the National Health Conference. He then moved the report be referred to the Committee on Division II, headed by Dr. Spilman. Motion was *seconded* and *carried*. The Speaker of the House, Felix A. Hennessy, President-elect, entered the meeting, and assumed the chair. He referred Dr. Parker's report to Dr. Spilman's committee. Upon motion duly *seconded* and *carried*, the president's address was referred to Dr. Macrae's committee. Dr. Hennessy called upon Dr. Shaw to present the report on Division III on medical care for the medically indigent.

Dr. Shaw gave a detailed report of the recommendations of the National Health Conference, and followed with the recommendations of the House of Delegates of the American Medical Association. Upon motion duly *seconded* and *carried* the report was referred to Dr. Ellyson's committee. Dr. Erskine called upon Dr. Fred Moore to give the report on Division I on expansion of public health and maternal and child health services.

Dr. Moore: We have had a folder prepared for you in the central office which contains the text of

the National Health Conference program. I will read parts of it to you, and I will also try to interpret it so that it will mean more to us here in Iowa. (He then read the recommendation regarding expansion of general public health services, which calls for additional expenditures of \$200,000,000. On a presumptive division by population, Iowa's share would be \$3,750,000, or about \$37,500 per county.) In the last three years, there have been established some six hundred local public health units, either as county or district health units. These would be strengthened under this program. Applying the same sort of analysis to the \$165,000,000 for maternal and child health services, we find that it would mean \$1.25 per capita. Iowa would be allotted \$3,125,000. Dr. Bierring tells me the approximate birth rate is 40,000 annually, or approximately \$80.00 for each childbirth. This covers the essential recommendations of Title I. I did not have the opportunity to hear the discussion of this part of the program in Chicago because I was engaged with another committee. The Reference Committee reported to the House of Delegates, and it adopted the following resolution:

"1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's Cabinet. (2) The general principles outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health Services are approved and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except so far as this cannot be successfully accomplished through the private practitioner."

I might say that it seemed to be the feeling of the delegates at the special session in Chicago that we should not fight against the appropriations if the public wanted them, but we should see that the medical profession had something to say about the expenditure. There is in that recommendation considerable clash between the possible interpretation of the National Health Conference program and the recommendations of that committee. I do not believe that an unprejudiced person can read the report of the National Health Conference and the discussion of the proposed program as expressed by Surgeon General Parran and by Miss Roche, particularly in the last couple of years, without getting the feeling that they were ready to enter the practice of medicine and render care to these groups. That is the feeling which permeated the atmosphere at Chicago. There was some discussion in this connection as to the advisability of adding this statement, "these programs shall be subject to the approval of state medical societies," and I do not know whether or not this was adopted in the Reference Committee and

changed by the Master Committee report, because I have not seen the proceedings to the Reference Committee on this section. Evidently the committee has presumed to safeguard that by their statement in Section 3. In other words, it insisted on the care of the patient by his personal physician rather than by a government physician. Mr. Speaker, I move the referral of the report to Dr. Hennessy's committee. Motion was *seconded* and *carried*.

Dr. Hennessy: I will ask Dr. Thornton to report on Division IV, on a general program of medical care.

Dr. Parker: Dr. Thornton has been called home, but he has asked Dr. Woods to give his report.

Dr. Moore: I want to make an additional statement in regard to the programs being subjected to approval by the state medical societies. Dr. Bierring advises me that a definite agreement was made between the Public Health Service and state and professional health authorities that these social security funds would only be available for programs which have been approved by state medical societies. Probably the Reference Committee was advised of this, and that may account for the elimination of that phrase and the introduction of Section 3. The question was raised as to how the approval of the state medical societies was gained.

Dr. Bierring: The local program must be approved by the county medical society. The statewide program must be approved by the state medical society. The programs in Iowa have been referred to the county medical societies. That is the principle to which you should adhere in the future. The duty of the state societies is to supervise and control federal program expenditures. If you do that I do not see how you can permit the Public Health Service to encroach upon the private practice of medicine.

Dr. Woods next gave the report of Division IV of the National Health program, a general program of medical care, and read the recommendation of the House of Delegates of the American Medical Association. Upon motion duly *seconded* and *carried*, the report was referred to Dr. McNamara's committee. Dr. Hennessy then called upon Dr. Lee F. Hill to give the report on Division V, insurance against loss of wages during sickness.

Dr. Hill: Division V summarizes the Technical Committee's report to the Interdepartmental Committee. The Technical Committee, preliminary to its recommendation, points out that on any average day in the year there are about five or six million people unable to work due to disability. Of the employed, the average disability is seven days a year; the average wage loss between \$28.00 and \$35.00 a year per person, or \$1,500,000 to \$2,000,000 per year for the country. Loss of wages makes it more difficult for the individual who is ill to pay for the cost of the illness. If one could determine what the loss per year would be, he could protect himself, but this figure is unpredictable. The committee compares temporary disability with unemployment insurance so far as loss of wages is concerned. It compares

permanent disability with old age disability, pointing out the fact that the man who is permanently disabled usually is younger and has dependents. It estimates that half the people disabled are totally disabled, and that about four-fifths of them are under sixty-five years of age. The present social security laws provide partial income during unemployment, and income to old age groups. Workmen's compensation laws protect against accident or injury arising from work, but the individual has no protection against sickness. The committee advocates two plans; the first, to cover temporary disability lasting up to twenty-six weeks; and the second, to cover permanent disability lasting longer than twenty-six weeks. This is to be patterned after old age insurance. The cost for temporary disability will be one per cent of wages with a waiting period of seven to fourteen days. It would provide about a 50 per cent indemnity. Permanent disability would cost one-tenth to two-tenths per cent of total wages, possibly reaching as high as three per cent in a generation or two. This was not essentially a part of the medical service program. Unless the worker is protected by insurance in some such manner, however, he might not be able to pay for medical care, and so this part of the program was connected with the medical service program. Mr. Speaker, I *move* this report be referred to Dr. Boice's committee. Motion was duly *seconded* and *carried*.

Dr. Hill: I should like to read Recommendation 6 of the House of Delegates of the American Medical Association, which is as follows:

"6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession, under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives relative to the proposed National Health Program."

I think this is important, and that we should indorse, not only the recommendations of the House of Delegates of the American Medical Association, but also this Recommendation 6, that is, provided our own House does so approve.

Dr. Hennessy referred this to the Committee on Miscellaneous Business, under Dr. Reeder's chairmanship.

Dr. Throckmorton: I am not a member of this House of Delegates, but I have been a delegate to the American Medical Association from the Section on Nervous and Mental Diseases for many years. I want to tell you that there was a very great change in the attitude of that House between the time of the June meeting and the special session in September. Personalities and party politics were taboo in the latter meeting. I have never seen a House more united than the September one. Its one purpose was how best to solve this problem. I thought this National Health Conference program was largely fomented by and conceived in politics, and many others seemed to feel so. We felt that other professions and

classes had suffered from governmental propaganda, and that the medical profession was now getting its share. We can no longer stand by and do nothing about it. If the government wants to pour money into the states and counties, the money should be governed and controlled and used by the local medical profession. I think the administration has been sincere and wants to bring about some reforms. We should at least salvage something from our traditional form of practice and do our utmost to give the best medical service to the people.

Upon motion duly *seconded* and *carried* the House adjourned to reconvene at 1:30 p. m.

Sunday Afternoon

The House of Delegates reconvened at 2:00 p. m., with Dr. F. A. Hennessy, Speaker, presiding.

Dr. Hennessy: Is there any new business pertinent at this time in relation to the subject under consideration?

Dr. M. C. Hennessy: I *move* that this House of Delegates go on record as approving the action of the Iowa State Department of Health in requiring citizenship for a license to practice medicine in Iowa.

Motion was *seconded* by Dr. Boice.

Dr. Moore: When this motion was presented at the House of Delegates of the American Medical Association, we did not take it very seriously. It was passed without much discussion, and I thought there would be no kickback from it. I thought it was a resolution easy enough for the House to pass, and that the Boards of Examiners would have to act upon it. I question the wisdom of the action taken by the Board of Examiners in Iowa, and I should not be surprised to see them change their decision.

Dr. Valentine: I would like to ask Dr. Moore's reasons for questioning the action.

Dr. Moore: If we close participation in professional activities in this country to qualified men who come from other shores, I feel objection in this country would be bitter. Free trade should pertain to people as well as commodities, and I think the admission of foreigners to practice in this country should be based upon their professional qualifications and attainments, rather than upon whether they have become naturalized here.

Dr. Brinkman: I agree with Dr. Moore. We will have a kickback if we take this action. If they are qualified, we should welcome them.

Dr. Brock: I feel that this motion is in order and has its virtues. If we are going to open our doors to an influx of foreigners, we should open the doors of our universities to more medical students.

Dr. Bellinger: I agree with Dr. Brock. The universities and the American Medical Association are trying to reduce the number of medical students. I think the students should be considered before we permit foreigners to enter.

Dr. MacEwen: It is not true that American medical colleges are reducing the number of students. There are more men in medical schools today than there were twenty years ago.

Dr. Bellinger: That is true, but there are four or five times as many men making application.

Dr. Moore: We should look also at the political implications of the situation. If we take the position as advocated in this motion, we are expressing greater respect for the cults than we are for regularly qualified men to practice medicine.

Dr. Albright: The reason so many students are rejected is that they apply at many schools, some at as high as 63 schools.

Dr. M. C. Hennessy: Under normal circumstances I would not make that motion. We are now the victim of political refugees. Some of these take advantage of this country without giving anything in return.

Dr. Brinkman withdrew his remarks made earlier.

Dr. F. A. Hennessy: Are you ready for the motion?

The question was put and the motion was *carried*.

Before we proceed with other business, we will hear from Dr. Bernard:

Dr. Bernard: I would like to have Dr. Fred Moore present the program of the Interprofessional meeting at Waterloo, October 12. This program is the result of six months' work.

Dr. Moore explained the difficulties encountered in arranging the program and gave a brief résumé of the essayists and their subjects. He mentioned also that copies of the program were to be mailed to every member of the Iowa State Medical Society.

Dr. F. A. Hennessy: Now that those things are settled, we will come back to the purpose of the meeting. Dr. Macrae, may we have the report of the Committee on Reports of Officers.

Dr. Macrae: The Committee concurs with our president in his speech, and congratulates him upon his masterly presentation of the subject. The Committee also recommends that the speech be edited and released for publication as may be deemed proper. Mr. Speaker, I *move* its adoption.

The motion was duly *seconded* and *carried*.

Dr. Hennessy: We will now have the report of the Committee to Consider the Expansion of Public Health and Maternal and Child Health Services, Dr. M. C. Hennessy, chairman.

Dr. M. C. Hennessy: Our Committee, after studying the recommendations of the National Health Conference in regard to expansion of public health and maternal and child health services, and after reviewing the recommendation of the Reference Committee of the House of Delegates of the American Medical Association, recommends that the House of Delegates of the Iowa State Medical Society concur in it and approve the recommendations as adopted by the House of Delegates of the American Medical Association on September 17, 1938. Mr. Speaker, I *move* the adoption of this report.

The motion was *seconded* and *carried*.

Dr. Munger: I do not think that such an important question as the expansion of public health service, particularly in rural America, should go by default. I quote from Dr. Olin West: "The one great problem before the medical profession is that of the delivery

of adequate, scientific medical service to all the people, rich and poor, at a cost which can be reasonably met by them in their stations of life." In what direction are public health services to be expanded? How urgently is a district health officer needed? What does he do that is not or cannot be done by the general practitioner? Sooner or later the public must decide what its health program is to be, and the physicians and surgeons are the ones who are technically trained to tell them how to accomplish it.

Dr. Hennessy: We are now ready for Dr. Spilman's report on the expansion of hospital facilities. The resolution adopted by the National House of Delegates on this question is as follows:

"2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

"Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent."

Dr. Spilman: Your Committee recommends approval of the action taken at the recent special meeting of the House of Delegates of the American Medical Association. We favor the expansion of general hospital facilities where actual need exists, stressing the importance of more complete use of existing hospital facilities rather than construction of new institutions and emphasizing the fact that efficient administration of the existing hospital facilities and their satisfactory continuation could be assured if they were to be reimbursed for the costs of necessary hospitalization of the medically indigent. Your Committee recommends that special attention be paid to the need in this state for an expansion of the existing hospital facilities for the care of mental cases. Your Committee feels that there is often a misconception in the minds of the public as to the actual economic problems of hospital administration and recommends that a policy of education to clarify the situation be carried on by properly designed publicity. Mr. Speaker, I *move* the adoption of this report.

The motion was *seconded*.

Dr. Hill: I wonder if the delegates are familiar with the discrepancy between the report of the Technical Committee and that of the Council on Medical Education and Hospitals. The latter report shows that only two per cent of the population is more than thirty miles from a hospital, while the former report gives the percentage as thirteen or fourteen.

Dr. Treynor: I think the federal authorities are using the wrong yardstick. Time, rather than distance, is the important factor now.

Dr. Brinkman: Apparently the government would lead the public to believe the hospital game is a racket, and that we are making an enormous sum of money. I wish the government knew the outstanding

indebtedness of the hospitals, and the expense of maintaining them. Very few hospitals are self-sustaining. If the government wants to do something, it should reduce this indebtedness, stop payment of enormous sums of interest, and furnish free beds for those who cannot pay for them. If the government will take care of the hospitals in this way, we will take care of the public.

Dr. Van Metre: Many of us in rural communities travel many miles a week to see patients in hospitals. We are handicapped by the distance between hospitals.

Dr. Bierring: There is no question but what some of the southern states have a distinct need for hospital facilities. The recommendation of this committee and that of the National House of Delegates is very helpful, in that both committees recommend bolstering existing hospitals rather than constructing new ones. Under the present county hospital laws, there is no reason why counties which wish a community hospital should not obtain federal funds to build one.

Dr. Hennessy: Are you ready for the question? The motion is *carried*. We will now hear from Dr. Ellyson on Division III, Medical Care for the Medically Needy. The action of the National House of Delegates on this subject is as follows:

"3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions and that such care should be organized by local governmental units and supported by tax funds.

"Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

"Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

"Your committee wishes to see established well coordinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

"In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the

public welfare administrative procedures are simplified and coordinated; and, second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

"Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that 'The rôle of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice.'"

Dr. Ellyson: The Committee on Medical Care for the Medically Needy recommends the approval of the entire Section 3 of the recommendation of the House of Delegates of the American Medical Association, with the following additions to the last paragraph: "We recommend that the present so-called Iowa plan, as it varies in the different counties, be continued and adjusted to fit the changing conditions in local counties. We further recommend that the old age group be considered as statutory poor for medical and surgical relief in each county. We further recommend that medical and surgical relief for the marginal group be determined by local authorities cooperating with the county medical societies, and when so determined the county society shall carry it under its regular contract for the care of the indigent. In addition, we should like to recommend that the resolution adopted by the House of Delegates of the American Medical Association relative to the expansion of the Bureau of Medical Economics, be adopted for the Iowa State Medical Society and its component county societies. This last does not fall within the original recommendation, strictly speaking, but we feel it is important and we believe the Medical Economics Committee should be enlarged to help with the work in Iowa. Mr. Speaker, I *move* the adoption of this report.

The motion was *seconded*.

Dr. Shaw: We did not try to set any limits on income, to separate marginal from low income groups. The relief problem should be handled as it is now. We have seventeen counties still receiving state funds for medical care. Following a conference, they asked for an increase of 33⅓ per cent, and received it. That will enable them to give good care. The counties going off state relief have continued with essentially the same plan, but with county funds. The program in Iowa is pretty well worked out. Some changes should be made and we are working on them.

Dr. Hennessy: The motion is still before us. Are you ready for the question? The motion is *carried*. Dr. McNamara, will you give us the report of the Committee on a General Program of Medical Care? The action of the National House of Delegates on this question is as follows:

"4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital service insurance which is

being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

"Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

"In addition to insurance for hospitalization your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

"Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

"Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

"Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems."

Dr. McNamara: Your Committee recommends the adoption of the recommendations of the Reference Committee of the House of Delegates of the American Medical Association, and in addition recommends that in the development of plans by county or district medical societies to meet local medical needs, the full cooperation of all local health agencies be sought. We further recommend that the Iowa State Medical Society shall consider all feasible methods to educate the general public as to the value of indemnity insurance. Mr. Speaker, I *move* the adoption of this report.

The motion was *seconded*.

Dr. Shaw: The matter of hospital insurance, in that report, should be taken up. We have only one company in Iowa. Either we should get behind that

company and push it, or we should help organize a new company. We need to foster the idea of hospital insurance.

Dr. Bruce: May I offer this recommendation, that the Iowa State Medical Society, without delay, through its duly appointed committees, in conjunction with insurance companies and other assistance, study a possible plan of voluntary health insurance for the low income group along lines approved by the American Medical Association. These duly appointed committees should be given all possible help, in order to be prepared, if necessary, to present a plan along this line to the Iowa state legislature in the coming session.

Dr. Erskine: I said this morning that Iowa might well be a laboratory for controlled experimentation. I think the component societies should experiment together with a view to making medical care available to more and more people. If your report is approved, can I assume, Dr. McNamara, that the House of Delegates favors and authorizes such experimentation?

Dr. McNamara: I cannot speak for the House, but my own answer would be "yes."

Dr. Losh: I have investigated the hospital insurance plan now in force in Minneapolis. It is working very satisfactory. I think something of that kind is absolutely essential.

Dr. Hennessy: There is a motion before the House. Are you ready for the question? The motion is *carried*.

Dr. Parker: I *move* that the Webster County recommendation be referred to the Medical Economics Committee.

Dr. Brock: I *second* the motion.

Dr. M. C. Hennessy: I *amend* the motion to read that the plans must, in addition, be submitted to the county medical societies.

Dr. Spilman: I *second* the amendment.

The amendment to the motion was voted upon and *carried*, and then the motion as amended was *carried*.

Dr. Shaw: I *move* that the House of Delegates authorize the enlargement of the Medical Economics Committee to fifteen members with subcommittees working under each present member.

The motion was duly *seconded*, put to a vote, and *carried*.

Dr. Hennessy: We will now have the report of the Committee on Recommendation V on Insurance Against Loss of Wages During Sickness. The action of the National House of Delegates on this subject is as follows:

"5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle, as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency."

Dr. Boice: Your Reference Committee recommends the approval of the action of the House of Delegates of the American Medical Association of September 16 and 17, in unreservedly endorsing the principle of compensation for loss of wages during sickness. Your Committee, however, feels that there should be a committee of appeal from any controversial decision of the medical employee of the disbursing agency. This Committee should be composed of three local physicians in good standing in the local county medical society. I *move* the adoption of this report.

The motion was duly *seconded* and *carried*.

Dr. Hennessy: Dr. Reeder, will you give the report of the Committee on Miscellaneous Business?

Dr. Reeder: It is the consensus of the Committee on Miscellaneous Business that further careful studies of the recommendations of the Technical Committee be made. We believe that as yet the rank and file of the profession in Iowa are not properly informed of the proposed national setup. It is further recommended that that portion which is accepted by the House of Delegates and that which is rejected be set up in columns as rejected and accepted in a very concise form which will make it easy for the rank and file to have a proper interpretation and understanding of the probable proposed legislation. Mr. Speaker, we recommend that Dr. Stahr of Fort Dodge, president of the Webster County Medical Society, be given the floor to bring a message which we feel is of real interest to the House of Delegates. I *move* the adoption of this report.

Dr. Woods: I think this whole thing is a mass of confusion. I was told the entire proceedings of the National Health Conference would be made available, through the columns of the *Journal of the American Medical Association*, but it was not forthcoming. I finally wrote Dr. Draper, who spoke for Miss Roche at San Francisco, and obtained the material from him. It is very confusing. I do not think we know yet what the program of the National Health Conference will be. I think that this program as tabulated should be carefully studied by the Medical Economics Committee before being published in accord with the recommendation of Dr. Reeder's Committee.

Dr. Reeder's motion was *seconded*.

Dr. Moore: Dr. Woods, were your releases excerpts or the total addresses?

Dr. Woods: They were both.

Dr. Moore: I asked Dr. West for material on the National Health Conference and he told me that his office had arranged to purchase a transcript of the proceedings and it would be available shortly. He later informed me that he had been told this transcript would not be available, and that the proceedings would be edited and published later.

Dr. Bierring: I received a transcript today from the Surgeon-General's office. I will see that the central office has a copy.

Dr. Moore: I think we should make a distinction between the National Health Conference program as written, and the addresses made concerning it. We have the specific program suggested, but we do not

have an accurate transcript of the remarks made by those present.

Dr. Hennessy: Are you ready for the question? All in favor of accepting the report of Dr. Reeder's committee signify by saying "aye." The motion is *carried*.

Dr. Woods: I *move* that the Medical Economics Committee or some committee draft a distinct statement as to what we accept of the National Health Conference program, and what we reject, and publish it in the *JOURNAL*.

The motion was *seconded*, put to a vote, and *carried*.

In accordance with Dr. Reeder's request, Dr. Stahr was given the courtesy of the floor.

Dr. Stahr: We in Webster County agree with you that there should be prolonged study before action is taken on a plan for the low income group in Iowa. Two of our county society members attended the Chicago meeting and were struck with the fact that in the two days' session, effects were discussed, and not causes. Regardless of what plan the Iowa State Medical Society may formulate for care of the people, unless you have a strong weapon to protect yourself, it will be taken away from you.

Dr. Bruce: I *move* that the House of Delegates authorize the Board of Trustees to appropriate such money as is requisite to the establishment of an efficient, functioning, coordinated interprofessional association in every county in Iowa.

Dr. Marker: Who is going to undertake the administration of this group in our society?

Dr. F. A. Hennessy: The Interprofessional Association.

Dr. Ellyson: I *second* the motion.

Dr. Fay: Who will make this request?

Dr. F. A. Hennessy: I presume that the Interprofessional Association will, through the action of the House of Delegates. Dr. Bernard, will you speak on this?

Dr. Bernard: The Interprofessional Association is not a subsidiary of the Iowa State Medical Society. We have druggists, dentists, nurses, and veterinarians. We of the medical profession are outnumbered two to one and three to one in some counties. You must take the other 4,000 members of this organization into consideration. The other professions will welcome anything that will make the organization better, but you should know that the interprofessional associations are doing more in one day than the medical profession is doing in five or six weeks. It is our profession that is lagging. The interprofessional groups are all interested in social security and this program; some of them favor socialized medicine, and these other professions must be considered. As far as organization goes, the north half of the state is almost complete; the south half needs organization, but it will come. We would appreciate help, but I do not know how the other professions would feel about a paid secretary. We must not overbalance this group with our own profession.

Dr. Marker: I *amend* Dr. Bruce's motion to make it read that the money be appropriated on request

of the Committee on Public Policy and Legislation, and that that Committee be made the official body to disseminate information to the lay public.

Dr. Fay: I *second* the motion.

Dr. Hanna: Does that not emasculate the motion?

Dr. Moore: I am confused about this amendment and its relation to the main motion. If I understand the import of the amendment, it merely encourages this committee to use funds for public education.

Dr. Fay: No, it merely makes it possible for you to get the money from the Board of Trustees. You are a member of the Committee on Public Policy and Legislation and also of the Interprofessional Association.

Dr. Moore: Then we who represent this Society in the Interprofessional Association are supposed to get the money for this setup? This I cannot do, for the reason that the Interprofessional Association is a cooperative group and I do not believe we should go to the point of tying ourselves into that organization lock, stock and barrel. It would be much more appropriate to wait and see what the response will be when we offer our program on October 12 in Waterloo.

Dr. Hanna: I do not see that it makes any difference how this is accomplished. The idea is to put over the program.

Dr. Bernard: There is nothing wrong as far as I can see, if this Society wishes to pay mileage of men to present programs.

Dr. Ellyson: We are unanimous in our belief that some of our money should be spent for education, and I think we can trust the Board of Trustees to expend it wisely.

Dr. Erskine: We are unanimous in our belief that the public should be educated in our reasons for opposing compulsory health insurance under political control. We are unanimous in the belief that we should perhaps spend some of our money in an effort to do this. It is apparent that education could be conducted by the interprofessional groups or the Medical Economics Committee or the Committee on Public Policy and Legislation. It is apparent that the amendment by Dr. Marker, Trustee, is merely for the purpose of making the procedure legal. If the amendment and the motion are passed, I believe the purpose is to spend some of our money through one or all of those committees to educate the public to our attitude on the dangers of compulsory health insurance under political control.

Dr. Hennessy: We will vote on the amendment. All in favor signify by saying "aye." The amendment is *carried*. Miss McCord, will you read the motion as amended?

Miss McCord: The motion as amended reads: I move that the Committee on Public Policy and Legislation be authorized to request the Board of Trustees to appropriate such money as is requisite to the establishment of an efficient, functioning, coordinated interprofessional association in every county in Iowa, and that the Committee on Public Policy and Legislation be made the official body to disseminate information to the lay public.

Dr. Hennessy: You have heard the motion as amended. All in favor signify by saying "aye." Motion is *carried*.

Dr. Parker: Mr. Speaker, the following figures constitute the official registration of this special session of the House of Delegates: delegates, forty-nine; alternates, fifteen; state officers, nineteen; county officers, eight; miscellaneous members, seven; making a total of ninety-eight in attendance.

Upon motion duly *seconded* and *carried*, the meeting adjourned at 4:45 p. m.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

American Board of Internal Medicine. Written examinations will be held February 20, 1939. Application must be received on or before January 1. Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

Eleventh annual Graduate Fortnight of the New York Academy of Medicine, October 24 to November 4, New York, N. Y. Subject for 1938 session—Diseases of the Blood and Blood-forming Organs.

Twenty-third International Assembly of the Interstate Postgraduate Medical Association of North America, October 31 to November 4, 1938, Public Auditorium, Philadelphia, Pennsylvania. Dr. William B. Peck, Freeport, Illinois.

Symposium on Mental Health held by the Section on Medical Sciences of the American Association for the Advancement of Science, Winter Meeting, December 27 to 31, 1938, Richmond, Virginia. Secretary, Paul O. Komora, 50 West 50th Street, Room 822, New York, N. Y.

CHANGE IN ANNUAL SESSION DATES

The dates for the 1939 annual meeting of the Iowa State Medical Society have been changed from May 10, 11, and 12 to April 25, 26, and 27, by order of the Executive Council. This change was made because of the fact that the American Medical Association will meet in St. Louis the week following the time originally set aside for the Iowa meeting, and it seemed advisable to make a change so that Iowa physicians might attend both meetings without being away from their offices two consecutive weeks. The dates chosen for 1939 fall on Tuesday, Wednesday, and Thursday. This departure from the usual Wednesday, Thursday and Friday meetings has been made to permit the meeting to be held without interfering with the Drake Relays, the dates of which are April 28 and 29, and during which the hotels are filled to capacity. Therefore, the new dates set for the 1939 meeting are Tuesday, Wednesday, and Thursday, April 25, 26, and 27. Remember the change in dates and plan now to attend the Eighty-eighth Annual Session of the Iowa State Medical Society.

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES

In the September issue of the JOURNAL, the Speakers Bureau published tentative outlines for the postgraduate courses which will be presented this fall in West Union, Dubuque, Fort Dodge, Sheldon and Emmetsburg. Complete schedules for the five courses, giving dates, subjects, lectures and locations are now listed below.

The fee for the University Course in medicine and surgery to be conducted in West Union is \$5.00, while the courses in general therapeutics to be held in Dubuque, Fort Dodge, Sheldon and Emmetsburg will cost \$10.00. This fee will be payable to the local chairman in each center at the opening meeting.

Medicine and Surgery, Court House, West Union, Iowa

- Oct. 6 Malignancies of the Urinary Tract
Nathaniel G. Alcock, M.D., Iowa City
- Oct. 13 Diagnosis and Treatment of Nephritis
Willis M. Fowler, M.D., Iowa City
- Oct. 20 Medical Treatment of Non-tuberculous Diseases of the Lungs
Horace M. Korn, M.D., Iowa City
- Oct. 27 Surgical Treatment of Diseases of the Lungs and Pleura
Azel Ames, Jr., M.D., Iowa City
- Nov. 3 Specific Treatment of Infectious Diseases
Philip C. Jeans, M.D., Iowa City
- Nov. 10 Minor Surgery of Today
Frank R. Peterson, M.D., Iowa City
- W. E. Walsh, M.D., Hawkeye, Local Chairman

General Therapeutics

Julien Dubuque Hotel, Dubuque, Iowa

- Oct. 10 X-ray Therapeutics of Acute Infections
James F. Kelly, M.D., Omaha
- Oct. 17 Medical Treatment of Non-tuberculous Diseases of the Lungs
Ralph B. Bettman, M.D., Chicago
- Oct. 24 Diagnosis and Treatment of Diseases of the Breast
Nymphus F. Hicken, M.D., Omaha
- Oct. 31 Treatment of Infections of the Genito-urinary Tract
Edward N. Cook, M.D., Rochester
- Nov. 7 Diseases of the Lower Gastro-intestinal Tract, Featuring Regional Ileitis
Philip W. Brown, M.D., Rochester
- Nov. 14 Modern Treatment of Anemia
Adolph Sachs, M.D., Omaha
- Nov. 21* Diagnosis and Treatment of Common Skin Disorders
Henry E. Michelson, M.D., Minneapolis
- Nov. 28 Diagnosis and Treatment of Nephritis
Willis M. Fowler, M.D., Iowa City
- J. C. Painter, M.D., Local Chairman

*Tentative.

General Therapeutics

Warden Hotel, Fort Dodge, Iowa

- Oct. 11 X-ray Therapeutics of Acute Infections
James F. Kelly, M.D., Omaha
- Oct. 18 Medical Treatment of Non-tuberculous Diseases of the Lungs
John H. Peck, M.D., Oakdale
- Oct. 25 Diagnosis and Treatment of Diseases of the Breast
Nymphus F. Hicken, M.D., Omaha
- Nov. 1 Treatment of Infections of the Genito-urinary Tract
Edward N. Cook, M.D., Rochester
- Nov. 8 Diseases of the Lower Gastro-intestinal Tract, Featuring Regional Ileitis
Philip W. Brown, M.D., Rochester
- Nov. 15 Minor Surgery of Today
Frank R. Peterson, M.D., Iowa City
- Nov. 22* Diagnosis and Treatment of Common Skin Disorders
Henry E. Michelson, M.D., Minneapolis
- Nov. 29 Diagnosis and Treatment of Nephritis
Willis M. Fowler, M.D., Iowa City
- A. A. Schultz, M.D., Local Chairman

General Therapeutics

Arlington Hotel, Sheldon, Iowa

- Oct. 3 Head Injuries
Walter D. Abbott, M.D., Des Moines
- Oct. 10 Hypertension
Horace M. Korn, M.D., Iowa City
- Oct. 17 Roentgenology of the Gastro-intestinal Tract
Leo R. Rigler, M.D., Minneapolis
- Oct. 24 Diagnosis and Treatment of Neuroses
William Malamud, M.D., Iowa City
- Oct. 31 Diseases of the Gallbladder and Liver
R. Russell Best, M.D., Omaha
- Nov. 7 Diagnosis and Treatment of Common Skin Disorders, and Cancer of the Skin
Ruben Nomland, M.D., Iowa City
- Nov. 14 Peptic Ulcer
George B. Eusterman, M.D., Rochester
- Nov. 21* Surgical Treatment of Diseases of the Lungs and Pleura
Stuart A. Harrington, M.D., Rochester
- G. E. Vermeer, M.D., Local Chairman

General Therapeutics

Kermore Hotel, Emmetsburg, Iowa

- Oct. 4 Vitamins
Philip C. Jeans, M.D., Iowa City
- Oct. 11 Modern Treatment of Anemia
Willis M. Fowler, M.D., Iowa City
- Oct. 18 Roentgenology of the Gastro-intestinal Tract
Leo R. Rigler, M.D., Minneapolis

*Tentative.

- Oct. 25 Diagnosis and Treatment of Neuroses
William Malamud, M.D., Iowa City
- Nov. 1 Diseases of the Gallbladder and Liver
R. Russell Best, M.D., Omaha
- Nov. 8 Diagnosis and Treatment of Common
Skin Disorders, and Cancer of the Skin
Ruben Nomland, M.D., Iowa City
- Nov. 15 Treatment of Infections of the Genito-
Urinary Tract
Gerald V. Caughlan, M.D., Council Bluffs
- Nov. 22* Surgical Treatment of Diseases of the
Lungs and Pleura
Stuart A. Harrington, M.D., Rochester
- F. X. Cretzmeyer, M.D., Local Chairman
- *Tentative.

For further information regarding any of the programs, please communicate with the local chairman at each center, or write the Speakers Bureau at 505 Bankers Trust Building in Des Moines.

"REFRESHER" COURSES

Two "refresher" courses in obstetrics and pediatrics will be conducted this fall by the Speakers Bureau, through the cooperation of the faculty of the College of Medicine of the State University of Iowa, the Iowa Pediatric Club, the Central Association of Obstetricians and Gynecologists and the State Department of Health. These courses will run for eight weeks and will include four lectures in obstetrics by University men, and four lectures in pediatrics by various pediatricians throughout Iowa.

The Eleventh Councilor District will inaugurate a new plan in presenting its "refresher" course this fall. The first two meetings will be held in Atlantic, the next three meetings in Red Oak, and the last three in Harlan. The Ninth Councilor District will hold its course in Chariton. Both centers will begin their programs the second week in October.

The fee for the "refresher" courses will be \$2.00 and all physicians, nurses and assistants are eligible to register and are urged to do so. Letters have been directed to all physicians in the vicinity of the centers holding the courses, containing full information in regard to the dates, locations and speakers. Final outlines are as follows:

Obstetrics and Pediatrics

Hotel Whitney, Atlantic, Iowa

- Oct. 10 The Therapeutic Use of Endocrine
Products in Obstetrics and Gynecology
Sterility
E. D. Plass, M.D., Iowa City
- Oct. 17 Abortion—Cause and Treatment
Ante and Postpartum Hemorrhage
R. M. Collins, M.D., Council Bluffs
6:30-7:30 p. m. Dinner
7:30-9:30 p. m. Lecture
R. A. Becker, M.D., Local Chairman

Hotel Johnson, Red Oak, Iowa

- Oct. 24 Puerperal Infection—Prevention and
Treatment
Vaginal Infections—Diagnosis and
Treatment
J. H. Randall, M.D., Iowa City

- Oct. 31 Syphilis in Obstetrics and Gynecology
Immediate Care of the Newborn,
Especially the Premature
W. F. Mengert, M.D., Iowa City
- Nov. 7 Newer Knowledge of Nutrition Among
Infants and Children
P. C. Jeans, M.D., Iowa City, or
J. D. Boyd, M.D., Iowa City
6:00-7:00 p. m. Dinner
7:00-9:00 p. m. Lecture
W. S. Reiley, M.D., Local Chairman

Hotel Saylor, Harlan, Iowa

- Nov. 14 Convulsion in Infancy and Childhood
R. H. McBride, M.D., Sioux City
- Nov. 21 Otitis Media and Its Complications in
Infancy and Childhood
J. V. Treynor, M.D., Council Bluffs
- Nov. 28 Recent Advances in Serum Therapy
in Some Communicable Diseases
Fred Moore, M.D., Des Moines
6:30-7:30 p. m. Dinner
7:30-9:30 p. m. Lecture
A. L. Nielson, M.D., Local Chairman

Obstetrics and Pediatrics

Hotel Chariton, Chariton, Iowa

- Oct. 11 The Therapeutic Use of Endocrine
Products in Obstetrics and Gynecology
Sterility
E. D. Plass, M.D., Iowa City
- Oct. 18 Abortion—Cause and Treatment
Ante and Postpartum Hemorrhage
R. M. Collins, M.D., Council Bluffs
- Oct. 25 Puerperal Infection—Prevention and
Treatment
Vaginal Infections—Diagnosis and
Treatment
J. H. Randall, M.D., Iowa City
- Nov. 1 Syphilis in Obstetrics and Gynecology
Immediate Care of the Newborn,
Especially the Premature
W. F. Mengert, M.D., Iowa City
- Nov. 8 Newer Knowledge of Nutrition
Among Infants and Children
P. C. Jeans, M.D., Iowa City, or
J. D. Boyd, M.D., Iowa City
- Nov. 15 Convulsions in Infancy and Childhood
R. H. McBride, M.D., Sioux City
- Nov. 22 Otitis Media and Its Complications
in Infancy and Childhood
J. V. Treynor, M.D., Council Bluffs
- Nov. 29 Recent Advances in Serum Therapy
in Some Communicable Diseases
Fred Moore, M.D., Des Moines
6:00-7:00 p. m. Dinner
7:00-9:00 p. m. Lecture
H. D. Jarvis, M.D., Local Chairman

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

REPORT OF FALL BOARD MEETING

The Woman's Auxiliary to the Iowa State Medical Society held its fall board meeting at the Hotel Fort Des Moines, in Des Moines, Friday, September 9, 1938. Mrs. Harman, president, called the executive session to order at 1:30 p. m. Dr. Hickenlooper, chairman of the advisory committee of the Iowa State Medical Society, brought greetings to the auxiliary. The treasurer reported a balance of \$89.84. The following committee chairmen gave brief reports: Mrs. Hennessy, finance; Mrs. Merkel, program (in absence of Mrs. S. E. Lincoln, chairman); Mrs. Rockafellow, Hygeia; and Mrs. Smith, organization. During the discussion which followed these reports it was suggested that the programs be related in some manner to subjects of interest and concern to the medical profession. It was urged that *Hygeia* be placed where children of adolescent age will read it and that every auxiliary member be a subscriber and pass her copy on to someone who might not otherwise read it.

The organization of new county units was stressed by Mrs. Smith and her committee. Several plans were discussed and members were asked to be alert to invite interested women in counties not yet organized to become members at large. Later these women might be valuable in organizing new units.

Mrs. Russell C. Doolittle, Secretary Pro Tem

SUGGESTIONS FOR PROGRAMS

A recent news letter from Mrs. V. E. Holcombe, chairman of the health education program committee of the Woman's Auxiliary to the American Medical Association, carries the following thought-provoking paragraph: "Our first duty is to become informed along health lines so that we may give the laity a more intelligent conception of health and healthful living. Only thus can we hope to be an ally of the medical profession, and at the same time, serve the best interest of the public." Most important of all, perhaps, at the present time, is the urgent need for the general public to understand and appreciate the problems confronting the medical profession. The subject of socialized medicine is a popular one for women's club meetings and other lay groups, and every physician's wife should be well informed on all phases of the question. The following outline

has been suggested for special study or for regular monthly programs:

1. The National Health Conference
2. Confidence in Your Physician
3. Is Medicine to be Socialized?
4. Who Chooses Your Doctor?
5. Economics and the Ethics of Medicine
6. Rural Medical Service
7. Organization of Medical Services
8. Medical Service Plans
9. Questions and Answers on Medical Economics

Packets containing leaflets on these subjects may be obtained upon request from Dr. R. G. Leland, of the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

NEW RADIO SERIES

A new series of dramatized health broadcasts is being presented this year, beginning October 19, by the American Medical Association and the National Broadcasting Company. These programs are not intended to replace instruction in health in the school room, but it is hoped they will serve as supplements and valuable aids to vitalize the subject of health and relate it to the everyday experience of all school children of America. The broadcasts will be made over the Blue Network of the National Broadcasting Company each Wednesday afternoon, at 1:00 p. m., central standard time. The schedule for the next four weeks is as follows:

- | | |
|------------|--------------------------|
| October 19 | What Is Health? |
| October 26 | Growing Stronger |
| November 2 | Seeing and Hearing Well |
| November 9 | Healthier Boys and Girls |

We urge our auxiliary members to use whatever influence they may have to secure these broadcasts over their local stations which are affiliated with the Blue Network. The radio has long been recognized as a valuable medium in disseminating information to the American people, and we must not overlook its possibilities in any educational campaign looking toward a more complete understanding between the medical profession and the laity. Let us do our share in making a national by-word of the radio announcer's toast: "To America's Schools — YOUR HEALTH!"

SOCIETY PROCEEDINGS

Black Hawk County

More than fifty members and guests of the Black Hawk County Medical Society met at Black's Tea-room in Waterloo, Tuesday, September 27, to view a sound motion picture film on Clinical Treatment of Syphilis, shown and discussed by Robert F. Hansen, M.D., of the State Department of Health, Des Moines.

Bremer County

P. J. Leinfelder, M.D., of Iowa City, was the speaker of the evening when the Bremer County Medical Society and members of the staff of the Mercy Hospital, met in Waverly, Thursday, September 22. Dr. Leinfelder spoke on Ophthalmology as an Aid to General Diagnosis.

Dubuque County

The Eighty-fifth Anniversary Meeting of the Dubuque County Medical Society was held Thursday, September 22, at the Dubuque Golf Club, Randall Place, Dubuque. Eighteen holes of golf were enjoyed by those present in the afternoon, and at five o'clock, the guest speaker of the day, A. Thomas, M.D., associate professor of medicine, University of Chicago, Rush Medical College, delivered an address on Water Balance in Health and Disease. After the six-thirty banquet, Frank R. Peterson, M.D., head of the department of surgery, State University of Iowa, College of Medicine, spoke on The Diagnosis and Treatment of Malignancy of the Large Bowel. Present also as guests of the society were Harry M. Ivins, M.D., of Cedar Rapids, and Thomas F. Thornton, M.D., of Waterloo, who presented a general discussion of the survey on medical care, now being conducted throughout the country by the American Medical Association.

L. E. Cooley, M.D., Secretary

Johnson County

The Johnson County Medical Society held its regular monthly meeting at the Hotel Jefferson, Wednesday, October 5, in Iowa City. After the dinner and business meeting the following program was presented: School Health Examinations, R. H. Heeren, M.D.; 4-H Club Health Examinations, Julian D. Boyd, M. D.; and Periodic Health Examinations in Private Practice, James A. Greene, M.D.

W. M. Fowler, M.D., Secretary

Linn County

The following program was scheduled to be presented before the Linn County Medical Society on Thursday, October 6: Hips, paper by Marius Nygaard Smith-Petersen, M.D., clinical professor of orthopedic surgery, Harvard Medical School, Boston, Mas-

sachusetts; discussion by Arthur Steindler, M.D., of Iowa City, Donald C. Conzett, M.D., of Dubuque, and Clyde B. Meffert, M.D., of Cedar Rapids; ten minute paper by B. L. Knight, M.D., of Cedar Rapids, on Review of Cancer Work in Linn County.

The next meeting of the organization will be held Friday, October 21, when William Malamud, M.D., professor of psychiatry, State University of Iowa, College of Medicine, will present a clinic in psychiatry.

Notice is directed to a change in the meeting date for November. Dr. Roger Anderson of Seattle, Washington, will speak before members of the Linn County Medical Society on Friday, November 11, instead of November 10, as previously announced.

T. F. Hersch, M.D., Chairman Program Committee

Madison County Annual Meeting

Officers elected at the annual meeting of the Madison County Medical Society held in Winterset, Monday, September 12, include: Dr. Ralph L. Wicks of Winterset, president; Dr. John F. Veltman of Winterset, secretary and treasurer; and Dr. I. K. Sayre of St. Charles, delegate.

Scott County

The Scott County Medical Society on Tuesday, September 6, entertained Robert S. Berghoff, M.D., of Chicago, as guest speaker. Dr. Berghoff is clinical professor of medicine at Loyola University Medical School, and spoke on Heart Disease.

H. A. Meyers, M.D., Secretary

Washington County

The annual turkey dinner for the members of the Washington County Medical Society, their wives and guests, was held in Wellman, Tuesday, September 27. Professor William J. Peterson of the State Historical Society, delivered the address of the evening on Centennial Events in Iowa.

W. S. Kyle, M.D., Secretary

Wayne County

The regular meeting of the Wayne County Medical Society was held Thursday, September 15, in Dr. A. E. Davis' office in Seymour, with the following program: Toxemia of Pregnancy, Karl R. Luthy, M.D., Seymour; Eclampsia, J. H. McCall, M.D., of Allerton; and Placenta Previa and Postpartum Hemorrhage, C. N. Hyatt, M.D., Humeston.

G. H. Sollenbarger, M.D., Secretary

Woodbury County

The opening meeting of the fall series of programs of the Woodbury County Medical Society was held

Monday, September 12, at the Sioux City Country Club, with Senator Guy M. Gillette of Cherokee and Representative Vincent F. Harrington of Sioux City, as guests of the occasion. After the seven o'clock dinner, these two speakers spoke generally on Impending Legislation with Special Reference to Socialized Medicine, and discussion was entered into by many members present.

W. H. Gibbon, M.D., Secretary

PERSONAL MENTION

Dr. A. A. Rose, who has practiced for many years in Story City, is still in that locality, and the item carried in the August JOURNAL to the effect that he had left to practice elsewhere, was due to incorrect information received in the central office.

Dr. Julian M. Bruner, of Des Moines, was honored recently by being invited to submit his exhibit on "Photography of the Cervix Uteri," for the Fifty-first Annual Meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, held in White Sulphur Springs, West Virginia, on September 22, 23 and 24. Dr. Bruner's was the only exhibit on display.

Dr. Leo C. Nelson, formerly of Des Moines, and more recently of Bronson, Michigan, has arrived in Jefferson, where he will take over the practice of the late Dr. Dwight A. Mathes. Dr. Nelson was graduated in 1931 from the State University of Iowa, College of Medicine.

Dr. Mathew A. Tinley, of Council Bluffs, was elected president of the American Association of Railway Surgeons for 1939, at the recent annual meeting of that organization held in Chicago.

Dr. Julian E. McFarland, who for the past year has been a member of the staff at the State University of Iowa, College of Medicine, has associated himself with his father and brother, Dr. G. E. McFarland, and Dr. G. E. McFarland, Jr., in Ames, for the private practice of medicine.

Dr. A. J. Bryant, after practicing in Montour for more than twenty years, has left that locality, and located in Liberty Center.

Dr. H. W. Mathiasen, formerly of Persia, has moved his family to Neola, where he will open his offices soon for the practice of medicine.

Dr. Leo J. Miltner, who has been associated since 1930 with the Rockefeller Foundation Hospital and Medical School at Peking, China, has returned to Iowa, and is opening offices in Davenport. Dr. Miltner is a graduate of the State University of Iowa, College of Medicine, and prior to leaving this country, had been associated with Dr. Arthur Steindler in the department of orthopedic surgery for four years.

MARRIAGES

The marriage of Miss Lois Parker of Iowa City, and Dr. Stanley T. Moen of Hartley, took place September 10 at the Oak Hill Presbyterian Church in St. Louis, Missouri. Mrs. Moen has been engaged in medical social work at the University Hospitals for the past three years. After a short wedding trip the young couple returned to Hartley, where Dr. Moen is associated with Dr. W. C. Hand in the general practice of medicine and surgery.

Miss Ramona Beck of Danville, Iowa, and Dr. J. Vernon Luck of Iowa City, were united in marriage September 3 at the First Congregational Church in Danville. After the ceremony and reception, Dr. and Mrs. Luck left on a ten day trip through Wisconsin and Michigan, returning to Iowa City where Dr. Luck is on the staff of the medical faculty of the State University of Iowa, College of Medicine, serving as assistant to Dr. Arthur Steindler.

DEATH NOTICES

Herrick, Thomas Blanchard, of Manson, aged fifty-two, died suddenly September 2, after a heart attack. He was graduated in 1912 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Calhoun County Medical Society.

Stewart, Charles Edmund, of Palmer, aged seventy-five, died September 3 in St. Joseph's Mercy Hospital in Fort Dodge after an extended illness. He was graduated in 1887 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a member of the Pocahontas County Medical Society.

Woodburn, William, of Boone, aged seventy-seven, died September 2 after suffering a stroke one week previously. He was graduated in 1888 from Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Boone County Medical Society.

SPEAKERS BUREAU RADIO SCHEDULE

The Speakers Bureau wishes to announce that the Iowa State Medical Society radio broadcast will now be heard on Tuesdays at 4:00 p. m. over Stations WOI at Ames and WSUI at Iowa City. The following program will be presented during the month of October:

October 4	Rocky Mountain Spotted Fever Carl F. Jordan, M.D.
October 11	Your Gallbladder Lester D. Powell, M.D.
October 18	Menopause J. S. McQuiston, M.D.
October 25	Death Begins at Forty C. L. Putnam, M.D.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

Medical History of Hardin County

The expressed purpose of the History of Medicine Committee of the Iowa State Medical Society is to set down in a permanent file all the historical facts in relation to medicine during the early days of the settlement of the state of Iowa. We feel that no time can be lost if we are to obtain these facts from the older generation of Iowa physicians, since many of these men are rapidly approaching the age when we can no longer profit by their narrations of personal experiences. In most instances, these historical surveys have been made especially for publication in the JOURNAL, but recently there appeared in print elsewhere a complete story of the medical history in Hardin county, and we feel justified in departing from our accustomed procedure to the extent of republishing abstracts from this excellent article. It first appeared in the *Eldora Herald-Ledger* of Eldora, Iowa, issue of August 4, 1938, and was prepared by Dr. and Mrs. E. O. Koeneman of Eldora. Acknowledgment and thanks are extended to the authors and the publisher for permission to use the following paragraphs:

The first physician who waited upon the pioneer settlers was Dr. R. S. Parker, who located in Eldora in the spring of 1851. He, like many of the physicians of that time, acquired his knowledge of medicine by reading in a tutor's office. It was then the era when steeped herbs gathered from the fields, the prairies, and the woods, were the main source of medication, and blood letting was in practice also.

History has it that the county, in the period from 1851 to 1855, had a number of that type of physician, among them Drs. J. R. Lord, J. F. Ball, O. G. Fisher, O. F. Hixon, A. P. McKinney, A. E. Smith, Nelson Donaldson, Henry Fisher, F. J. Kallmartin, B. E. Dobson, and B. E. Strickler. The names of these physicians were

not long on the roll—they came, stayed a short time and went, or died.

But in this same era were a number of physicians whom we today would call progressive, and they made history. In that class was Dr. J. H. Cusack, an Irishman, born in 1820, who received his education in Belfast, Ireland. He was educated for a minister, and understood the Latin and Hebrew languages, and was proficient in Greek. In addition to his practice, he was treasurer of the county, and later also a judge. He died in 1877, mourned by thousands who had learned to love and respect him for his noble traits.

In this era was Dr. Myron Underwood, who was educated at Mt. Morris, Illinois, attended Rush Medical College, and located in Steamboat Rock in 1860, moving to Eldora in July of the same year. He was the outstanding physician of this era, having a large practice which extended into Franklin and Grundy counties. He enlisted in the army as acting surgeon of the 12th Iowa Infantry, and served until discharged in October, 1865. He served one term as state senator. He had the reputation of being the leading physician in these parts. Another physician who practiced in this era was Dr. J. E. King. Living in Eldora and studying to be a physician, he opened a practice in 1861, and had the honor of being the fifth homeopathic physician in the state of Iowa. The story of this doctor's life as a pioneer would make an interesting volume of itself. He was still in active practice in 1911, and died in 1923.

To give an idea of the difficulties under which these early physicians labored, let us call your attention to the subject of transportation. In the first place, you must visualize a country not with roads like we are enjoying today, but rather one with mere trails, without bridges—and with streams and sloughs to cross. So consequently

they traveled by horseback, and were termed "saddle-bag doctors." Then when we came into the 70's, and the roads were somewhat improved, it was the team with the buggies and sleighs. A call many miles distant required a day or two to make, and a circuit of calls often took several more days. This necessitated horses of staying power and fleetness, so that the physician had to be "horse conscious," to use a present day expression. They took pride in their horses and tried to out-vie each other in their quality. Several of them entered their nags in the races at the fairs and country gatherings and aroused much interest in exhibiting them, which would now be called a good stunt in advertising. The faithful horse was the doctor's only mode of transportation until 1908, when the automobile came into the picture, but even that was not completely reliable until several years later.

Dr. George L. Marshall was a practicing physician in Eldora from 1878 to 1899, when he left to locate in Illinois.

It was in 1880 that Dr. N. C. Morse came to Eldora. He was a native of Covington, Kentucky, born in 1850, and was a graduate of Ohio University, well read and thoroughly versed in the principles of medicine. He was an author, his contribution being a volume on the postoperative care of surgery. He was a typical Kentucky gentleman. One of his favorite forms of address was "My little lady," or "My little man," and his philosophy of life was such as to gain the confidence of his patients. And with Dr. Morse was introduced the new era of medicine. For instance, it was he who first used the hypodermic needle, which gained him a reputation for alleviating pain and nonplussed all his colleagues. He was deeply interested in surgery. It was at the beginning of his career than an all too new idea on the healing of bones came into practice. Prior to this time, it was considered that bones would not heal without "laudable pus," but the order was changed so that it was deemed to be negligence or an error in treatment if a fracture developed pus. This was hard, naturally, for the older physicians at that time to accept, and especially so the old army surgeon who was an authority on fractures. Up to this time, inflammation of the bowels, or stoppage of the bowels, was not thoroughly understood as for cause, until it was discovered that the appendix was the offender causing the trouble. So at the beginning of this discovery the important question was—when was the right time to operate, and much debate ensued as to whether it should be an early or a late operation. Dr. Morse had to change his viewpoint decidedly before he retired from practice, as he held that it

should be proved that a pus sac had formed before operation. Surgeons now operate the moment the diagnosis of an offending appendix is made.

Dr. Morse was railroad surgeon for the Northwestern road in what was known as the Eagle Grove division. In the late nineties he erected the first hospital in the county, calling it the Emergency Hospital of Eldora, and it is regrettable that this memorial of the doctor's has had to be wrecked in order to make place for a newer hospital.

Dr. Morse gained a state-wide reputation. As railroad surgeon he was intimately associated with the headquarters in Chicago, and many notable surgeons were called to his hospital in consultation. He was in active practice until his death in 1922. Before his death, he had the distinction of being the first physician to own and operate an automobile, and it was amusing to hear him tell of his grief in its use.

Closely associated with Dr. Morse was Dr. William E. Marsh, who came here in 1893, having previously practiced in Union. Dr. Marsh was a graduate of the Iowa University School of Medicine and enjoyed quite an extensive practice. About 1900 he had the misfortune to lose his sight by a disease which the best of specialists' work at that time could not prevent. But his loss of sight did not deter him from carrying on his noble work, for he is still practicing in Eldora today, greatly admired for his cheerful spirit and his wonderful consideration for the needy poor. He is at the present time the acting secretary of the Hardin County Medical Society, an office which he has held since 1905.

In the same year, 1893, a homeopathic physician, C. C. Gethman, came to Eldora. At first he was associated with Dr. J. E. King, and possibly through this affiliation he at once enjoyed a large practice, in the beginning of which he should be classed as the last physician of the horse and buggy era, as his barn contained three or four teams ready for service. Later on the horse was forgotten when he changed to the use of the automobile. Let it be said of Dr. Gethman that no doctor ever practiced his profession with more zeal and determination to be of service to his fellow men, up to within a few weeks of his death in 1931.

Dr. William E. Whitney located in Eldora in 1894, having first practiced in Steamboat Rock. He became physician and surgeon for the State Training School for Boys, and held the position until his death in 1918. Dr. Whitney was a kindly man, taking the work of the care of the boys at the school as a very serious responsibility. He

had also an extensive practice, keeping him busy night and day.

An interesting character was Dr. W. H. Young, who was a Green Seal physician. To explain this phrase, it was in 1875 that the Licensed Physicians Practice Act was passed, entitling to registration all doctors who had practiced six months prior to the enactment of this law. Their license bore a green seal, distinguishing them from physicians who had graduated from medical school. Dr. Young's practice was limited to office calls and chronic diseases. He was an incessant entertainer and story teller.

It was through the influence of John T. Boylan, then sheriff of the county, that Dr. E. O. Koeneman decided to locate in Eldora in 1899. He is a graduate of the College of Physicians and Surgeons, the medical department of the University of Illinois, and received a degree in pharmacy from Drake University. He is in practice in Eldora at the present time. It was through the friendship which sprang up between Dr. Whitney and Dr. Koeneman that the latter became assistant physician at the School for Boys, becoming acting physician following Dr. Whitney's death in 1918.

Dr. D. O. King came to Eldora in 1909, practiced some five or six years, and moved to Waterloo.

Dr. E. H. Jones came here in 1904 and was in partnership with Dr. Whitney for a few years. He died in 1931 after a considerable period of ill health.

Dr. A. W. Harrold located here in 1902 and remained until 1925, when he moved to Ackley.

Dr. W. H. Van Tiger of the State University of Iowa medical school began practicing in Eldora in 1914. At the present time he is assistant physician at the School for Boys.

Dr. D. M. Nyquist began the practice of medicine in 1917, and is a graduate of the St. Louis University. He was closely associated with Dr. Morse, and took over the practice after the latter's death. He had active service in France during the World War, and on his return took over the management of the Eldora hospital. At the present time in addition to his practice, he is serving as mayor of Eldora.

Dr. J. R. Winnett located here in 1914 and was in partnership for several years with Dr. Nyquist in the hospital, but later went into practice for himself. He is a graduate of Drake University.

Dr. R. E. Gray, a native son of Eldora, began the practice of medicine in 1918, following his

graduation from the State University of Iowa. He is associated in the office with Dr. Koeneman, and followed the latter as physician at the School for Boys.

From 1915 to 1917, Dr. E. L. Bennett was associated with Dr. Morse, and after two years removed to California. Dr. B. M. Rinehart located here in 1905 and moved to Illinois in 1909. Dr. F. D. Boody practiced a short time here and then moved to western Iowa.

All the above is a chronicle of the physicians of Eldora, from an early day to the present time. The history would not be complete without mention of the doctors who located in the other towns of Hardin county. These will be enumerated under separate headings according to location.

POINT PLEASANT

Dr. Johnson came to this place in 1868 and died in 1877.

Dr. Atwater located in 1873 and later moved to Kansas. He practiced here about ten years.

Dr. Thomas Cosgrove came in the early seventies and moved to Hubbard in 1880.

NEW PROVIDENCE

Among the early day physicians were Drs. C. I. Cook; A. H. Lindley; Jessup, who later moved to Oskaloosa; Benbow, who moved to Colorado; H. P. Cutler, who came in 1874 and served in the First Colorado Valley Infantry, then moved to Oklahoma; I. A. Hunt, who located in 1881 and practiced a few years; B. M. Rinehart who practiced a year; Daniel Leary, who came in 1892 and practiced a few years; Curtis O. Mabee, who came in 1888 and had a good practice and the confidence of the community; and James Franklin Battin of the homeopathic school of medicine who came in 1897 and sold to Dr. Felt.

UNION

Dr. E. D. Whitacre located here in 1870. He had a large practice and later moved to Marshalltown, where he died. Drs. Tainter in 1870-71. R. F. Sheffield in 1875, I. H. McDill in 1876, A. H. Pillsbury in 1880, and A. H. Pierson in 1886. were among others. Dr. Edward C. Kauffman, who came in 1900, enjoyed a large practice and died in 1937, and was honored recently by the dedication of a city park as his memorial. Practicing at the same time in Union was Dr. Hunt who came in 1896 and Dr. Bothwell who came in 1910. Dr. Kenneth Weaver is now a physician in the town.

STEAMBOAT ROCK

The following is thought to be a correct list of the many prominent men who have from time to time practiced here: Drs. O. G. Fisher, 1855-58; Foster, 1857-59; A. E. Wright, 1860-63; Orrin Peabody, 1857-59; Dyer, 1860-62; Smith, 1862-64; W. C. Tracy, 1868, removed to Pennsylvania in 1872; A. A. Campbell, 1868 and died in 1879; E. Clark, 1873-83; E. H. King, 1874-78; Baker, 1873-78; Withrop, 1875 for one year; A. L. Low, 1878 for two years; Robert, 1879 for one year; M. C. Caldwell, 1879, moved to Nebraska in 1881; J. W. Caldwell, 1880, one of the best known physicians, practiced many years and was joined by his son, Willard Caldwell, in 1901, who is now the only physician in Steamboat Rock; Wood, 1882 for two years; William E. Whitney, 1894, later located in Eldora; George Porter, 1895-98; Boone, 1904, left the same year; Myron Underwood in 1860, moved to Eldora in 1861; and F. A. Cogswell, 1892. It would seem from this list of physicians that Steamboat Rock must have been quite on the map in Hardin county.

HUBBARD

Drs. Philip Slack came here when the town was platted and practiced until 1891; Kallmartin, 1880 for one year; A. J. Hunter, 1882-91; Thomas Cosgrove, 1880; T. J. Livengood, 1891, and died here, having a large practice; Lawrence, 1893, and remained two years; T. F. Brubaker, 1894, and is still in practice; C. U. McIntosh, 1890; F. L. Rabe, 1898, and moved to Ackley in 1910; Joseph E. Reed, 1910, died in Hubbard in 1929; T. G. Herrick, 1935; E. J. Knopf, 1937, now practicing in Hubbard.

WHITTEN

Drs. W. N. Porter came to Whitten in 1881; W. S. Brown, 1882; N. E. Springall, 1883; O. I. Furst, 1886; N. E. Mighells, 1887, later moved to Marshalltown; S. B. Sayre, 1881; Charles Austin Willett, 1902, later moved to Indianola, then to Norwalk, where he died in 1937; H. C. Willett, who is now in Des Moines; Frank P. Butler, 1893; C. W. Vroom, 1908, died in 1911; G. A. Blaha, now the only physician in the town.

IOWA FALLS

The following are the names and dates of physicians coming to Iowa Falls: Drs. J. F. Simonds, 1853; J. H. Foster, 1855; J. I. Evans, 1874; W. M. Morton, 1881; M. W. Hill, 1882; T. M. Cammack, 1883; Depew, 1863; W. O. Beam, 1887; J. W. Angell, 1889; Otto A. Pagelson, 1900; J.

H. Jackson, 1891; Ed William Burke, 1894; Mary Helen Parsons, 1900; Bessie J. Garver, 1899; Edward Bywater, 1905; J. W. Ekerhart, 1897; Nelson Merrill, 1896; James Wilson Williams, 1895; O. F. Grange, 1894; Frank H. Gaffey, 1907; L. B. Martin and P. H. Stoops, 1887; T. A. Bryson, 1891; B. E. Shattuck, 1894. Other Iowa Falls physicians who have practiced here in the past are Drs. D. A. Davis, Hart, Eaton, J. F. George, James, C. H. Guilbor, L. Patte, Felt, M. L. Harvey, and possibly a few others. Drs. J. A. N. Burgess, B. E. Purcell, O. J. Pagelson, C. M. Wray, E. L. Frazier, Fern N. Cole, A. W. Burgess, and Robert Johnson are in practice at the present time.

ALDEN

Beginning with 1864 the following physicians located in Alden: Drs. Crawford, J. F. George, B. F. Dobson, Benjamin E. Strickler, J. U. Davis, an army surgeon in 1884, B. F. Frisbie came in 1880 and died in 1905, enjoyed a large practice and made history for northwest Hardin county. Lewis in 1895 and was coroner for a time, H. Davis, W. B. Carpenter, Silas Card, J. A. Manix, C. C. Cady, Jonathan Johnson, who is now in practice and located with him is his son, W. A. Johnson.

RADCLIFFE

In the past this community has been served by the following: Drs. Pillsbury, T. N. Livengood, who moved to Hubbard, T. S. Waud, L. F. Frye, J. A. N. Burgess, now in Iowa Falls, E. C. Bliss, N. O. Dallager, C. E. Hooper, J. C. Bridgman, Hans Peterson from 1903 to 1905, J. A. Stalford, and R. R. Gaard, who is now the only physician in Radcliffe.

ACKLEY

The first physician here was Dr. I. N. Grist who came in 1865 and after ten years moved to Waterloo. Dr. James A. Kelso came in 1860, a native of Ireland, and served in the Civil War. He remained until 1867 and then moved to California. He was a student and a scholar. Dr. Potter was one of the most prominent of the early physicians of the town, others being Drs. Turk, Faulkner, Cander, Feustra, McDermott, Roberts, Hiln, and M. W. Hill. Dr. Symington was a prominent physician for many years and some of the later doctors were Drs. Raymond, Broom, Bryson, Jacobs, Turner, Hanson, Phelan, Harrold, and Thornton. Dr. Harold Mangun also had a practice here, but died a few years ago. Dr. J. J. Miller, a leading physician, and

Drs. E. M. Breniman and F. W. Houlihan are now serving the community.

Hardin county physicians have had their organizations for the mutual benefit of the fraternity, as in most counties of Iowa. The first was known as the Hardin County Medical Association, and was formed in June, 1873. A constitution was adopted and signed, and the officers were Dr. J. H. Cusack, president; Dr. E. H. King, secretary. This organization was active until about 1878, when it lapsed. Other attempts were made to sustain a society aiming at the same objects, but none succeeded until the present one was organized in 1899. On May 15 a meeting of all the physicians of the county was called at Eldora by Dr. N. C. Morse. It was held in the courthouse and was organized as the Hardin County Medical Society, which was to become a unit of the Iowa State Medical Society, the state forming the nucleus for the national medical organization. The object of the society was two fold—protection and mutual helpfulness. All duly authorized physicians were to be admitted, regulars, eclectics, and homeopaths. Officers elected were Dr. Symington, president; Dr. N. C. Morse, vice president; Dr. William E. Whitney, secretary and treasurer; Drs. J. E. King, Lewis, H. C. Willett, trustees.

At each meeting some noted specialist was secured to lecture to the society, thus making the meetings both interesting and of practical value to those attending. It was at the close of 1899 that the county board of supervisors was very much up in arms about the staggering sum of money it cost for the medical care of the poor. That year it had run well above \$5,000, because of a few patients who required long drawn out care. Consequently the board called for and secured bids for the service, the contract going to two physicians, one from the north and one from the south half of the county, at a total cost of \$800. In this year, 1900, during June, a special meeting of the society was called, at which resolutions were passed making it unethical for any society member to bid on pauper work under penalty of becoming ineligible to membership in the society.

During the two years which followed, the board of supervisors was threatening to import a physician who would do the work by contract, so the society brought about a happy solution of the situation in 1903, when they entered into a contract with the board by which the society would care for the indigent poor and the patient would be permitted to call any physician of his choice. The contract price for the year was \$800.

Because of the fraternal feeling existing for Dr. William E. Marsh, the entire amount remaining after state and national dues were paid was turned over to him as a remuneration for his work as secretary of the society. It is very gratifying to know that this form of contract work is still functioning in the county. This method of caring for the poor attracted widespread interest, as it was the first county in the United States to have such a system. Later it was called to the attention of the American Medical Association and adopted as a basis in several modified forms for contract work in other counties.

OLD RECORDS WANTED

The Historical Committee repeats its appeal to members of the State Medical Society for:

1. Any available record of special medical occurrences, press notices of professional services or personal anecdotes of pioneer doctors during the fifty years preceding 1880.

2. Copies of old medical journals published in Iowa after September, 1850, newspaper accounts of county, district or state medical society meetings, biographic and obituary notices of physicians during the period from 1850 to 1890.

Any expense attending the obtaining of this information will be assumed by the Committee.

AMERICAN BOARD OF SURGERY

In answer to the widespread demand for an agency which will attempt to certify competent surgeons, the American Board of Surgery was organized several months ago. Two groups of candidates are recognized for qualification by the Board; first, those who have already amply demonstrated their fitness as trained specialists in surgery; and second, those who, having met the general and special requirements exacted by the Board, successfully pass its qualifying examination. The first of these groups, the Founders Group, upon invitation by the Board, will be chosen from the following: first, professors and associate professors of surgery in approved medical schools in the United States and Canada; second, those who for fifteen years prior to the Board's organization have limited their practice to surgery; and third, members of special surgical associations approved by the Board.

All applications for the Founders Group must be received by January 9, 1939. No candidates for the Founders Group will be considered after that date. Requests for information should be addressed to the secretary, Dr. J. Stewart Rodman, 225 South Fifteenth Street, Philadelphia, Pennsylvania.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

THE HEART IN PREGNANCY—By Julius Jensen, Ph.D., assistant professor of clinical medicine, Washington University School of Medicine. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.50.

A TEXTBOOK OF PATHOLOGY—By William Boyd, M.D., professor of pathology and bacteriology, University of Toronto. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

HEMORRHOIDS—By Marion C. Pruitt, M.D., associate in surgery, Emory University School of Medicine, Atlanta, Georgia. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.00.

SYMPTOMS OF VISCERAL DISEASE—By Francis Marion Pottinger, M.D., professor of clinical medicine, University of Southern California. Fifth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.00.

SYPHILIS, GONORRHEA AND THE PUBLIC HEALTH—By Nels A. Nelson, M.D., director, Division of Genito-infectious Diseases, The Massachusetts Department of Public Health, and Gladys L. Crain, M.D. The Macmillan Company, New York, 1938. Price, \$3.00.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION—By Marion Douglass, M.D., assistant professor of gynecology, Western Reserve University; and Robert L. Faulkner, M.D., senior clinical instructor in gynecology, Western Reserve University. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.75.

THE NEW INTERNATIONAL CLINICS—Edited by George M. Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Volume II, First Series (old Forty-eighth). J. B. Lippincott Company, Philadelphia, New York and Montreal, 1938.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS—By H. O. McPheeters, M.D., attending physician, New Asbury, Fairview and Northwestern Hospitals, Minneapolis, Minnesota; and James K. Anderson, M.D., instructor in surgery, University of Minnesota School of Medicine. The F. A. Davis Company, Philadelphia, 1938. Price, \$4.50.

PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY—By Adam Edward Schlanser, M.D., colonel, Medical Corps, United States Army. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

MEDICAL STATE BOARD QUESTIONS AND ANSWERS—By R. Max Goepp, M.D., formerly professor of clinical medicine, Graduate School of Medicine, University of Pennsylvania. Seventh edition, revised. The W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.

ELECTROTHERAPY AND LIGHT THERAPY—By Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Third edition, revised. Lea and Febiger, Philadelphia, 1938. Price, \$7.50.

MATERIA MEDICA, DRUG ADMINISTRATION AND PRESCRIPTION WRITING—By Oscar W. Bethea, M.D., professor of clinical medicine, Tulane School of Medicine. Fifth edition, revised. F. A. Davis Company, Philadelphia, 1938. Price, \$5.00.

PEDIATRIC SURGERY—Edward C. Brenner, M.D., director of surgery, Riker's Island Hospital. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN—By John A. Hardy, M.D., El Paso, Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.

BOOK REVIEWS

ELECTROTHERAPY AND LIGHT THERAPY

By Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Third edition, revised. Lea and Febiger, Philadelphia, 1938. Price, \$7.50.

So definitely have values and procedures shifted in these more recent medical assets, that the newer the electrophysical measures, the more definitely are we assured of maximum end results.

Added to his own keen observations, Kovács has utilized the experience of other highly accredited clinicians, and profit therefrom accrues to the reader. Precision as to current, dosage and frequency are the essential factors to be considered in this form of therapy. The division between restorative, physiologic intensities and harmful modalities has been carefully appraised, and the marginal pathway made plain.

Ionization, electrocoagulation and electro-cutting have emerged into fields, becoming more inclusive, more acceptable and more definitely effective. Diathermy holds a major interest in this as in every parallel work in a decade. Kinetic energy, when once converted into caloric units, becomes an electrotherapeutic asset, controllable as to depth, radiation, intensity and duration. Of all the physically applied influences, heat has probably the highest therapeutic value and it does not appear to induce a reflex in the normal physical mechanism for heat control. Con-

ventional and short wave diathermy are alike understandable and in pneumonia, "relief of pain, relief of dyspnea and cyanosis with improvement in heart action and induction of sleep," are valued results. In neuritis the author states it "is the measure of choice," while its serviceability is very general. When driven to despair by a bellicose corneal ulcer, ultraviolet irradiation may destroy the bactericidal activity, may permit cell regeneration and stimulate tissue repair.

The work is complete, authoritative, vital, contemporary, and assets of definite value are made understandable.

E. G. L.

EIGHTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, AND MEETINGS OF THE PERMANENT COMMITTEE

Brussels, Belgium, June 27-July 3, 1935. Report of Captain William Seaman Bainbridge, MC-F., U.S.N.R., ret., Member of the permanent committee for the Delegation of the United States of America.

The International Congress of Military Medicine and Pharmacy was created in 1921 by the late King Albert of Belgium and Queen Elizabeth. It was formed to collect, standardize and codify the lessons of the war in medicine, surgery and sanitation in all their allied branches. The Congress has met every

other year since 1921 in various cities of the world and has been invited to the United States in 1939.

Medical officers have much in common. They are concerned with alleviating suffering wherever found. They realize that preventive medicine is more important than curative measures. Representatives of thirty-six countries attended this Eighth Congress at Brussels. As one reads the book, the fact that all these medical officers from so many countries met on common ground seems very significant. One realizes that no other branch of the military service could share each others problems and plans.

This book contains official reports on the following subjects discussed at the meeting; principles of organization and functioning of medical services in mountain warfare, determination of fitness for the different specialties in armies, navies and air forces, the posttraumatic abdomen, a study of the standardization of methods of analysis of food stuffs for military use, bucco-dental service at the front, and a comparative study of the functions of the administrative medical services of armies, navies and air forces.

L. A. W.

TEXTBOOK OF PATHOLOGY

By William Boyd, M.D., professor of pathology and bacteriology in the University of Toronto, Toronto. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

In this most recent edition of his textbook of pathology, Boyd has included considerable new material. However, much of this new material is very briefly treated. The chapter dealing with hematology has been largely rewritten as has the discussion on virus diseases. In the reviewer's opinion the only truly valuable feature which has been added is that of the descriptive outline of each organ in the state of health. This outline precedes a discussion of the organ in question.

This book corresponds in most respects to his last edition as to its general value, usefulness, readability, etc. It is a good textbook to have and to read, although one doubts if enough new material has been added to justify this last edition.

D. H. K.

PNEUMONIA AND SERUM THERAPY

By Frederick T. Lord, M.D., clinical professor of medicine, emeritis, Harvard Medical School; and Roderick Heffron, M.D. Revised edition. The Commonwealth Fund, New York, 1938. Price, \$1.00.

This handbook, revised in 1938, discusses fully the use of antipneumococcal serum in the treatment of pneumonia, with special attention to clinical diagnosis, selection of cases for serum treatment, identification of pneumococcus types, technic of administering the serum, possible reactions and their treatments, and results of serum therapy.

This edition contains important new information on dosage and results for Types I, II, V, VII, VIII and XIV, discusses the use of the rabbit serum, sets forth in detail the organization of a pneumonia control program and brings up to date essential information pertaining to serum therapy of pneumococcus pneumonia.

The authors feel that since pneumonia takes about 100,000 lives annually in the United States specific therapy should be widely used by physicians in general practice. This little book can be recommended as an excellent, practical guide for the handling of the pneumonia patient.

C. A. S.

ESSENTIALS OF OBSTETRICAL AND GYNECOLOGICAL PATHOLOGY WITH CLINICAL CORRELATION

By Marion Douglass, M.D., assistant professor of gynecology, Western Reserve University; and Robert L. Faulkner, M.D., senior clinical instructor in gynecology, Western Reserve University. Illustrated. The C. V. Mosby Company, 1938. Price, \$4.75.

The female generative organs undergo many normal physiologic variations in histology which are governed by a complicated endocrine mechanism, minor disturbances of which may cause profound changes of their structure. The purpose of this book is to present from a clinical point of view the normal histology, and common or important pathologic changes. It is up-to-date, well written, easily read, and generously illustrated by diagrams and microphotographs. It should be useful to students and internes, and to those who have not had the benefit of training in pathology.

A.D.J.

TAKE CARE OF YOURSELF

By Jerome W. Ephraim. Simon and Schuster, Publishers, New York. Price, \$2.00.

This book is called a practical guide to health and beauty and stresses the proper way to use and the prudent way to buy home remedies and cosmetics. It is written by a layman. The chapters dealing with weight reductions and constipation are especially well written. The "why" of hangovers and their treatment are discussed in an intelligent way.

The author throughout urges regular consultations with the doctor and dentist. With the possible exception of a paragraph on insomnia, this book could be recommended to the laity for interesting and helpful information regarding the maintenance of everyday health and how properly to select and use the products purchased for such purposes. The author points out that a few people use small amounts of whiskey and beer for a "nightcap" and that English physicians of the old school prescribe a mixture of wine for relaxation prior to retiring. However, this reviewer wonders if the use of alcohol in any form is justifiable in the treatment of insomnia.

T. E. E.

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, NOVEMBER, 1938

No. 11

MANAGEMENT OF SKULL FRACTURES AND CEREBRAL INJURIES*

HARRY E. MOCK, M.D., Chicago

The widespread incidence of skull fractures and serious cerebral injuries makes head trauma a problem of paramount interest to the general physician and surgeon. The automobile and other forms of motor travel, falls in the home and on the street, and agricultural injuries are responsible for over 90 per cent of the head injuries occurring throughout the country. Over half a million serious head traumas, with at least one hundred and fifty thousand of these showing skull fractures, annually occur in the United States. Every hamlet, village and city; every highway and byway of the land has its share of these serious injuries. Since 50 to 60 per cent of the deaths resulting from head trauma occur in the first twenty-four hours, and since comparatively few of the total number of these injuries occur in our large medical centers where neurosurgeons reside, it is self-evident that the full responsibility of early life-saving management falls upon the shoulders of the general physician or surgeon first receiving the case.

Your essayist is a general surgeon who has made the study of skull fractures and cerebral injuries a surgical hobby for the last ten years. As a result of this study he has become convinced that *if the high mortality rate from skull fractures is to be reduced, the general physicians and surgeons of the land must become thoroughly conversant with every angle of management—especially early management.*

The multiplicity of physiologic and pathologic changes following brain trauma makes the management of craniocerebral injuries one of the most difficult problems in surgery to teach. During the last two decades the medical literature has been filled with articles concerning the management of cranial, craniocerebral and cerebral in-

juries. In the majority of these articles the authors so stress their favorite treatment, for example, this or that form of dehydration or routine lumbar punctures or even subtemporal decompressions, that the reader gets the impression this is the only form of treatment to follow. Controversy concerning certain of these methods has been rampant. As a result of so many different methods being advocated and of so much controversy among the writers on this subject, the rank and file of the profession, each seeing only a limited number of such cases each year, have been utterly confused concerning the methods to follow. A recent author referred to the treatment of head injuries as "complicated" and as following a "crazy quilt" pattern.

If one endeavors to build up a routine form of treatment applicable to all cases or if one thinks it is necessary to utilize all the various procedures advocated, in every case, then management is complicated; but if one individualizes his case and applies to it only those procedures necessary to meet the situation and especially if he knows when and how to apply these various measures, the management ceases to be complicated. In other words, for certain patients the spinal puncture is life-saving, but all skull fractures do not need a spinal puncture, not even as a "guide for further treatment"; certain patients will show dramatic improvement from intravenous injections of hypertonic glucose or sucrose but this does not mean that all patients need to be dehydrated or that dehydration need be carried on for days or weeks. Confusion concerning management of craniocerebral injuries can be eradicated if the rank and file of the profession will only grasp the following facts:

1. There is no form of treatment, routine or otherwise, applicable to all craniocerebral injuries.

2. The treatment adopted, and frequently changed, depends altogether upon the signs and symptoms, frequently changing, presented by each individual case.

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

3. To evaluate these signs and symptoms demands the closest observation and the painting of the clinical picture by actually recording pulse, respiration and blood pressure every thirty minutes and the rectal temperature every hour until the patient is definitely responding favorably to treatment.

4. The correct interpretation of this clinical picture and the adaptation of treatment accordingly spells life or death for the majority of these patients.

5. Certain patients will die regardless of treatment but no surgeon is so wise as to pick conclusively the inevitable death case. Therefore, every patient should be given his chance to live by a judicious selection of the proper line of treatment, sometimes blood transfusion, sometimes large intravenous injections of saline and glucose when first admitted, sometimes immediate lumbar puncture, sometimes, although rarely, an early operation—often the withholding of the hand rather than adding irrevocable insult to injury.

The purpose of this paper is to try and simplify the "complicated crazy quilt" ideas of management which have been promulgated to the confusion of the average surgeon who sees only five to twenty serious skull fractures or brain injuries each year—a big order for a short address.

The facts and conclusions stated herein are based upon the personal management of 275 proved skull fractures; the treatment of several hundred head injuries of varying degrees of seriousness; the study of 875 cases of proved skull fractures submitted to the author on a two-page questionnaire prepared by him, from almost one hundred surgeons from all parts of the country (a cross-section review of management); and the study of more than 6,000 records of head injuries in eight different hospitals where the author and his associates were allowed to review the consecutive records over a five-year period—from these 6,000 records, 2,105 proved skull fractures were studied. Thus, 3,255 cases of proved skull fractures have been studied to obtain these facts. In addition close to one hundred cases of serious head injuries and skull fractures have been seen in consultation, but not included in the statistical study herein reported. Why "proved skull fractures?" Isn't the head injury case without skull fracture just as dangerous and the management just as important as the skull fracture case? The answer to the last question is emphatically yes. Whether the trauma is cranial, craniocerebral or cerebral the general principles of management are identical.

Proved skull fractures have been used through-

out my statistics in order to have a common measuring rod whereby I could collect statistics and evaluate results from the various sources from which my cases were collected. It was early apparent that if serious head injuries were used, one surgeon's idea of seriousness differed widely from another's; if he included all head injuries his mortality rate would be much lower than the surgeon who included only those who were unconscious and in the hospital for at least two days; or if he included only those who showed blood in the spinal fluid (routine lumbar punctures to pick the cases), his mortality rate would be higher than either of the above two. Finally, to classify the various forms of treatment it was essential to know what percentage of patients fell in each group. Head injuries without fractures as a general group are not as serious as skull fractures. The principles of treatment as gained from a study of skull fractures is applicable to all head injuries. A comparison of statistics, however, can be gained from using only proved skull fractures. For example, when I use proved skull fractures, my death rate is 17.7 per cent; but when I add to these skull fractures, 500 serious head injuries with a mortality rate of ten per cent, my total mortality rate is 12.8 per cent, if I want to use "head injuries" for my study. I might add 200 very slight head injuries without a single death and reduce my "head injury" mortality rate to eight per cent. The temptation is too great for accurate statistical study.

The first group of facts from a study of 3,255 cases which I wish to stress is as follows:

1. Very few hospital charts show carefully recorded readings of pulse, respiration, blood pressure and temperature every thirty minutes, one hour or even three hours during the first twenty-four or forty-eight hours when these patients are in serious condition.

2. Very few surgeons record the eye findings, the reflexes or other observations on the hospital chart.

3. Very few charts show early blood counts, or unalyses, both of which are necessary to rule out associated injuries. Blood in the urine suggests genito-urinary tract injury. A high leukocyte count, or one that is increasing, with a drop in the red blood count after twenty-four hours suggests associated internal injury with hemorrhage.

4. Many charts fail to show the analysis, especially a Wassermann test, on the spinal fluid when a spinal puncture has been performed.

5. The majority of hospital charts and ques-

tionnaires studied showed first, early or immediate taking of x-rays, "patient admitted through x-ray department"; second, the immediate repair of lacerations or setting of associated fractures in extremities, regardless of the patient's condition; and third, the early moving of patients from one hospital to another, usually to a county institution because "no one responsible for the case."

6. The majority of charts show that too many surgeons leave the patient alone, "let nature take its course"; or practice a very inadequate type of dehydration for the first twenty-four hours. Then if the patient lives and usually when his condition begins to show signs of growing extremely serious after twenty-four or forty-eight hours, the surgeon begins to fight, gives 50 cubic centimeters of a 50 per cent glucose solution, does a spinal puncture or even resorts to a subtemporal decompression.

We need not go into details concerning the above facts; common sense tells you the above things should or should not be done. No surgeon can treat brain injuries correctly without a carefully recorded chart showing which way the wind is blowing. No surgeon should be confused, neither should there be the least possible controversy concerning the management of skull fractures and serious brain injuries during the first six hours in the hospital, or perhaps the home. Remember, at first one does not know whether or not he is dealing with a skull fracture until the x-ray demonstrates the presence of a skull fracture or other proof develops. We should treat all such cases as possible skull fractures, knowing well that the damaged brain is the chief point of attack. Therefore, during the first few hours our entire effort is aimed at conserving the life of this patient. The following points concerning the average skull fracture case and its management during the usual shock period illustrates this fact.

When the following symptoms and signs are present, unconsciousness, marked shock, scalp lacerations, lacerations about face, bleeding from ears, nose or mouth, maybe associated fractures:

1. Put to bed immediately between blankets, apply heat, avoid undue disturbing until shock is overcome.

2. Do not immediately x-ray, suture scalp or other wounds, reduce associated fractures or operate, except in the rare life-threatening hemorrhage case.

3. Do not give morphine. If sedative is indicated, use bromides, chloral hydrate, amytal. Morphine masks the picture and adds to the already existing respiratory depression.

4. If stimulants are necessary, use caffeine, strychnia or hot coffee-whiskey enema.

5. Glucose or sucrose, 50 cubic centimeters of 50 per cent solution intravenously, is best means of restoring blood volume in shock. Use additional 200 to 300 cubic centimeters normal salt intravenously if indicated. Overcoming the shock, not dehydration, is the sole purpose here.

6. Concentrate upon conserving the patient's strength. Blood transfusion and the use of oxygen may be necessary.

7. Do nothing which adds insult to injury during early stage of management.

8. Watch and record pulse, respirations and blood pressure and temperature at least every hour, for in no other way can you guide your subsequent treatment.

In 275 consecutive skull fractures treated by the author, and including every death from one minute on after admission to his hospital service, twenty-one of the forty-nine deaths occurred in the first six hours. Nine of these were in the first hour and were undoubtedly inevitable deaths. In reviewing the charts of the remaining twelve I feel that at least three patients were robbed of their chance for recovery by too much treatment; that is, failure to conserve their strength until they could stand additional insult. In the remaining 249 cases the treatment adopted depended absolutely upon the indications furnished by the signs and symptoms of each individual case. A few of these, often with very extensive skull fractures, showed absolutely no signs or symptoms of brain injury and were, therefore, treated with rest only. They were carefully observed and hourly readings of pulse, respiration, blood pressure and temperature were recorded. (This was not always done in my earlier cases, but it has been done since I learned some bitter lessons.) These make up my Group I cases as follows:

GROUP I—5.4 PER CENT
REST TREATMENT ONLY

Indications

When signs and symptoms are practically negative, and when there is x-ray evidence of skull fracture or definite signs of basal fracture.

Treatment

Rest in bed for three weeks.

Observe closely for Group II, Group III, and Group IV signs.

Certainly no controversy or confusion should exist in your minds concerning the management of these cases. Ruling out these twenty-one early deaths and the fourteen cases treated in Group I we have left 240 cases in which some controversy

or some confusion might exist regarding management. Before breaking these cases down into the three groups where they were finally classified because of the treatment given, let us analyze the signs and pathologic changes which dictated the procedures adopted. As you sit by the bedside studying your individual case and reviewing the carefully charted signs and symptoms, certain conditions will be noted which will persuade you to continue with medical management only or to resort to a spinal puncture or perhaps to operate. Certain of these patients will have milder signs and symptoms which indicate certain lines of treatment, but no drastic measures will become necessary. A few will need nothing more than immediate rest in bed, and stimulants and, although a skull fracture is present, they will never develop other evidence of brain injury. The fact that they received stimulants takes them out of Group I. They could be x-rayed earlier than most cases. One has to argue with them and their relatives to keep them in bed at least three weeks. In the absence of a skull fracture, such patients would be classified as mild concussion or other mild head injuries, and in our practice would be kept in bed one to two weeks.

A larger number will show evidence suggesting skull fracture, confirmed later by x-ray, and in addition will have marked shock and disturbed consciousness varying from a dazed condition to coma.

In these, in addition to rest and stimulants for the shock, it is necessary to restore blood volume as soon as possible. No better method can be employed than the use of 50 cubic centimeters of a 50 per cent glucose solution or 50 to 100 cubic centimeters of a 50 per cent sucrose solution, and if necessary the addition of 200 to 500 cubic centimeters of normal salt solution intravenously. In a few, blood transfusion and the use of oxygen by a nasal catheter or the tent method may be indicated. Repeated examinations and careful hourly recording of the pulse, respiration, blood pressure and temperature show persistence of disturbed consciousness, slowing of the pulse and respiration, a dropping diastolic reading, and a rise in temperature to 100 or 101 degrees. Additional measures are definitely indicated, so one repeats the intravenous administration of the glucose or sucrose solution. A certain number will now become conscious, or if delirious will quiet down, and subsequently will show definite signs of improvement. No other treatment but rest in bed and close observation becomes necessary.

Others, however, will continue in coma, the pulse and respirations and low diastolic reading do not change and yet the absence of definite

neurologic findings and the general condition of the patient seem to warrant continued conservative management. In six or eight hours, therefore, a third intravenous injection of a hypertonic solution of glucose or sucrose is considered. One knows that there is a brain injury; otherwise the patient would not continue to have disturbed consciousness, slowed pulse, low diastolic pressure and perhaps absent superficial or changing reflexes. One knows that with all brain injuries there is a more or less increase in the amount of spinal fluid, which pushes the cortex outward toward the fixed bony shell, the skull. A certain amount of interference with the circulation, especially pressure on the peripheral vessels of the cortex and its lining, is bound to follow. The brain becomes congested. Added to this there is usually localized contusion, concussion with petechial hemorrhage and there may be even some laceration and cortical hemorrhage. The brain becomes more or less edematous. All of these conditions contribute more and more to the interference with the circulation and soon conditions of anemia and anoxemia supervene.

One must now ask himself, is it safe to repeat the glucose or should more drastic measures be instituted? He decides on continued dehydration. He knows that the hypertonic solution will withdraw fluid from the tissues, including the brain, and from the fluid reservoirs of the body, the greatest of which are the ventricles. He knows also that unless the excess of fluid, brought into the blood vessels by this use of hypertonic solutions, is eliminated, a reverse osmosis may set in and this fluid will be carried back into the tissues. Therefore, elimination is necessary and here we have our reason for giving the magnesium sulphate enema. Therefore, a concentrated solution of magnesium sulphate is given, preferably by enema to avoid vomiting (a dangerous condition in skull fractures) and the logical time to give it is one hour before repeating this second, or certainly the third glucose or sucrose intravenous injection. Since we want to keep the blood concentrated, within reason, to facilitate this withdrawal of fluid from the ventricles and the edematous brain, it is logical to limit the fluid intake. This can safely be reduced to twenty to thirty ounces in twenty-four hours, depending upon the age, adiposity and general condition of the given patient. Children and anemic individuals will need more fluid than a well nourished, fat individual.

Thus, for a certain percentage of the cases, judged solely by their signs and symptoms, continued dehydration treatment meets the situation. The evidence of increasing intracranial pressure

gradually disappears and the patient shows steady improvement. Of greatest importance is the ability to judge whether medical dehydration is meeting the situation, when to repeat the hypertonic glucose or sucrose solutions, when to depend only upon catharsis for dehydration and how to avoid excessive or over-dehydration.

Given a patient who, after the shock is overcome, continues restless and complains of headaches, but otherwise shows no untoward signs or symptoms, a magnesium sulphate enema may be given, followed in one hour by a second administration of 50 cubic centimeters of a 50 per cent glucose or sucrose solution, or, in the case of a child, the administration of 50 cubic centimeters of a 25 per cent glucose or sucrose solution intravenously. This is somewhere between five and eight hours after admission. Usually such a patient becomes quieter and the headache is relieved. If these symptoms do not recur, only one or two more magnesium sulphate enemas may be necessary. It is not unusual to have such a patient request an enema some three or four days later, because the headache is beginning to recur. The patients themselves soon learn to evaluate the benefits of these two procedures. After one or two weeks a slightly more generous liquid intake is allowed. These are the patients who usually recover by the end of two weeks and must be argued with to keep them in bed the required three weeks.

Given a patient who, after the shock is overcome, remains restless, delirious or in coma, whose pulse and respiration tend to become slower, with a dropping diastolic pressure, to 60, 50, or even 40, such a patient may show an erratic blood pressure and erratic reflexes. The temperature usually is elevated to 100 or 101 degrees. To this type of case, after six or eight hours, a second intravenous injection of 50 cubic centimeters of a 50 per cent glucose or sucrose solution is administered. In addition, the magnesium sulphate enema, or repeated enemas, are given. The fluid intake has already been limited. Occasionally, after this second injection, there is a definite improvement in the picture, and the improvement persists until the next day, when the patient again becomes restless and complains of headaches or becomes lethargic, with a definite slowing of the pulse and respiration. The intravenous solutions are again administered and again there is a definite improvement. In order to prevent a recurrence of this picture, the routine may again be repeated in twelve or twenty-four hours, with a gradual letting up in the dehydration if improvement continues.

Other individuals showing the above symptoms may not respond to the second intravenous injection, combined with the magnesium sulphate enema. A careful review of the chart may show that no catharsis or purging effect has been obtained from the enema; or, for some reason, in spite of the hypertonic solutions and free bowel movements, the desired improvement is not obtained. If the patient has gained somewhat or is holding his own, the third intravenous injection of hypertonic solution is administered in eight or twelve hours. If the desired improvement is not yet obtained, this patient definitely belongs in Group III; that is, he requires a spinal puncture. If, however, after each injection of glucose, combined with free bowel movements, there is a definite although not a pronounced improvement, one may continue to administer the hypertonic glucose solutions every eight or twelve hours, or, if the improvement is more pronounced, every twenty-four hours, for as long as the patient continues to improve and to approach normal. At the first sign of an increase in the signs and symptoms in such an individual, a spinal puncture should be resorted to.

Frequently one sees a patient who has responded to this medical dehydration routine, one who continues to receive his daily hypertonic glucose solution intravenously, his magnesium sulphate enemas and the limitation of fluids, and yet, after a week or ten days, again becomes restless, complains of headaches, may develop vomiting, or may become lethargic and stuporous. The surgeon must here decide whether this secondary condition is due to a recurrence of some cerebral pathology, or is due to over-dehydration. Usually, over-dehydration is the cause. If in doubt, the surgeon may resort to a spinal puncture. If he secures ten, twenty or thirty cubic centimeters of spinal fluid, under increased pressure, judged best by the manometer reading, then he is confronted with a recurrence or the development of some new cerebral condition. However, as a general rule, he will secure only a few drops to five or six cubic centimeters of spinal fluid, with practically no pressure reading, thus confirming his suspicion that his patient was over-dehydrated. One should never limit fluids, push the hypertonic solutions intravenously, or even the purging effects of the enema to this point. If, however, this condition develops, the above methods should be discontinued at once and 250 to 500 cubic centimeters of normal salt solution should be administered intravenously, or 1,000 cubic centimeters subcutaneously, in order to overcome the dehydration as soon as possible. It may again become

necessary to resort to dehydration, but it should be done cautiously.

Recently I was called to see a patient in consultation, who, one week previously, had sustained a skull fracture. He had been given a daily intravenous injection of 50 cubic centimeters of a 50 per cent sucrose solution and a magnesium sulphate enema twice a day. In addition, his fluids had been limited to one pint per day. He had come out of his coma in twenty-four hours. His diastolic pressure, which varied between 40 and 60 the first twenty-four hours, had stabilized itself between 70 and 80. His pulse and respiration had remained within normal limits, and his temperature had never been over one hundred degrees. Considering the extensive fracture shown by the x-ray, the attending surgeon was more than pleased by his progress. On Sunday, seven days after the injury, he was very restless and complained of headaches. He vomited once, and the nurse recorded it as projectile vomiting. A few hours later he became very drowsy. When awake he was constantly asking for water. The patient was in a town fifty miles from Chicago, and two hours had elapsed from the time the surgeon called me until I saw the patient. During this interval, the attending surgeon did a lumbar puncture, removing five cubic centimeters of clear fluid, stating afterward that he felt I would ask for one when I arrived. The examination of this patient was practically negative from a neurologic standpoint. He was very drowsy, but after fifteen or twenty minutes seemed more alert and was jocular. His only complaint was of headache and extreme thirst. His tongue was very dry. It was my opinion that this was a typical over-dehydrated patient. I suggested increasing his fluids immediately to three pints in twenty-four hours, stopping the glucose injections and the magnesium sulphate enemas, although warning that the latter should be given if he did not have a daily bowel movement. The patient immediately began to improve and left the hospital at the end of three weeks, apparently with no ill effects from his skull fracture.

Starvation, as well as over-dehydration, is another condition which must be avoided in these skull fractures. When the patient is in coma, it is frequently difficult to get him to swallow, either food or water. One of my early cases was of this type. Because of the persistent coma, I did a spinal puncture and repeated the puncture three times during the next week. In addition, I pushed my hypertonic glucose intravenously and made sure that he had two or three good watery bowel movements every day. A neurologist, called in

consultation, advised against a contemplated subdural decompression, but recommended continuing dehydration, both by hypertonic solutions and spinal drainage. At that time I was routinely endeavoring to strike a fluid balance in the body by giving 500 cubic centimeters of normal salt solution subcutaneously every forty-eight hours. I still think this is probably a good precautionary measure in coma cases where dehydration is maintained for a considerable length of time. Finally, at the end of two weeks, the nurse suggested that the patient was starving to death, since he had eaten hardly a mouthful since his admission. I immediately introduced an indwelling stomach tube and regular feedings were henceforth given until the patient was out of his coma. Shortly thereafter I saw a patient in another hospital in consultation. He had been in coma for one week. The attending surgeon was administering daily intravenous injections of hypertonic glucose solution and, in addition, was giving intravenous injections of magnesium sulphate. The patient was in a very weakened condition, and in spite of practically negative neurologic findings, other than coma, the prognosis was exceedingly bad. I asked the nurse if the patient would eat or take fluids, and she stated that he had not taken a thing since his admission. The attending surgeon was surprised to learn this, and I could readily understand his surprise. Again, an indwelling tube was placed in the stomach and regular feedings, as well as fluid, instituted. The patient immediately showed improvement and completely recovered.

In reviewing my 275 cases of proved skull fractures it was found that 50 per cent of the entire group received medical treatment only, some only shock treatment and sedation, some a very complete dehydration management. The twenty-one patients who died in the first six hours are included in this group, largely to prevent the excuse that these were inevitable deaths. All of the rest in this group completely recovered. The dramatic improvement in many of the cases following the second or third injection of 50 per cent glucose has thoroughly convinced me of its value. Failure to carry out an adequate dehydration program as above outlined, or pushing it to the point of over-dehydration, account for certain surgeons saying: "I never saw any good results from it." It can be and has been carried to absurdity. To refute the charge of "complicated management" just remember that 55.4 per cent of these patients have received no treatment other than rest or some form of dehydration treatment, and all recovered except the twenty-one first six

hour deaths who were probably doomed to die regardless of treatment. The following points concisely illustrate the clinical indications and the treatment administered in Group II.

GROUP II—50 PER CENT
GENERAL MANAGEMENT

Indications

1. All patients, except Group I, are in Group II, at first.
2. With gradual definite improvement, continue this management.
3. Observe closely for Group III or Group IV signs.
4. A few die in shock before treatment can start.

Signs and Symptoms

1. Shock in 90 per cent of all cases.
2. Disturbed consciousness, varies from dazed condition to deep coma (85 per cent).
3. Slowed pulse, 60 to 48, early stabilizes between 55 to 80.
4. Slowed respirations, 18 to 10, early stabilizes between 14 to 22.
5. Temperature usually 100 to 101 degrees (children's higher).
6. Blood pressure, systolic, often variable, early stabilizes. Diastolic, often 70, 60, 48, then stabilizes between 70 to 80.
7. Pupillary changes, constricted is rule; may be dilated, unequal and fixed. Soon become normal.
8. Reflexes sluggish or absent, less often exaggerated. Babinski sign (34 per cent of all cases).
9. Blood from orifices (20 per cent), cerebrospinal fluid in six cases (3 per cent).

Treatment

Shock: rest, heat, hot coffee enema, 50 cubic centimeters of a 50 per cent glucose or sucrose solution, normal salt solution intravenously and stimulants according to seriousness, sedatives if necessary (bromides, chloral, do not give morphine).

Increased intracranial pressure (after shock is over): repeat 50 cubic centimeters of 50 per cent glucose intravenously six to twelve hours; 50 per cent magnesium sulphate per rectum; restrict fluids 20 to 30 ounces per day; avoid over-dehydration; rest in bed three to eight weeks.

We have left now approximately 45 per cent of the 275 skull fracture cases that represent the most serious types of brain injury. A lesser percentage of serious head injury cases, without skull fracture, belong in this same group and re-

quire the same management, a point which we must not forget. Again, based upon the signs and symptoms of each individual case, 34.1 per cent of this remaining number of cases received spinal puncture treatment. These comprise my Group III cases. Several of them had repeated punctures. All who survived received continued dehydration management and as a rule one puncture with continued use of 50 per cent glucose intravenously met the situation. With the exception of these cases, the spinal punctures were performed after the shock had been overcome. Two patients developing convulsions immediately after admission were punctured; one died. One patient, where death was imminent, was punctured but died fifteen minutes later. Eighty-five per cent of this group received spinal punctures within the first twenty-four hours. Ninety per cent showed blood in the spinal fluid, meeting the requirement of many that subarachnoidal hemorrhage is the only indication for spinal drainage. When indicated, the earlier lumbar puncture is performed, the lower the death rate. The following chart illustrates this fact.

TIME OF SPINAL PUNCTURE COMPARED WITH
TOTAL DEATH RATE

	Mock's Series	Collected Series	Hospital Series
Total No. Cases.....	180	800	1283
Total No. Sp. Punc.,			
Group III	49	263	617
Per Cent Punctured First			
24 Hours	84%	66%	22%
Per Cent Mortality First			
24 Hours	44%	40.2%	49%
Total Per Cent of Deaths..	18%	26%	40%

What are the indications for lumbar puncture? If, in spite of a medical dehydration regime, even lasting only a few hours, the following signs, symptoms or conditions develop, one should resort to an early spinal puncture:

1. Given a patient who is restless, delirious or in varying degrees of coma; who had a slow pulse with a gradually increasing rate; whose respirations were below 16, but are changing to a rapid rate or to a Cheyne-Stokes variety; whose blood pressure shows a persistently low diastolic reading and a systolic pressure that is often erratic; a lumbar puncture should be resorted to without waiting for further effects from dehydration. Patients approaching this picture should be punctured as early as four hours and certainly before twenty-four hours.

2. Given a patient who is restless, delirious or in coma but whose pulse, respiration and blood pressure seem to stabilize and yet the disturbed consciousness persists for twelve or eighteen hours, a lumbar puncture is indicated.

3. Given a patient who is conscious and who has definitely suffered a severe head injury but whose pulse, respiration and diastolic pressure remain low in spite of dehydration, a lumbar puncture should be resorted to, usually before twenty-four hours have elapsed.

4. Given a patient who develops slight twitchings in the extremities or convulsions or indefinite focal signs, a lumbar puncture is immediately indicated upon the appearance of such signs.

5. Persistent restlessness and persistent headaches, even with complete absence of all other signs, not yielding to medical dehydration, demand recourse to lumbar puncture.

6. A temperature which persists around 102 degrees, or which shows a tendency to climb higher, in spite of very careful medical dehydration, demands a lumbar puncture.

7. Rigidity of the neck, usually a sign of meningismus, often developing on the second, third or fourth day, requires a lumbar puncture; first, to differentiate the condition from a meningitis; and second, because it usually gives relief of the symptom.

8. Meningitis supervening on a head injury demands early and repeated lumbar punctures.

We must again stress the fact that the closest observation of these patients is necessary if the indications for spinal puncture are to be noted as soon as they appear. Increasing brain volume, due to hemorrhage or edema, will so rapidly cause a cerebral anemia and anoxemia, or signs of a medullary compression with its paralyzing effect on the vital centers, that unless relief measures are instituted at once, the patient will soon be beyond help and will suddenly die.

It would be far wiser to perform lumbar punctures on too many of your cases as soon as the shock is relieved, and repeat the puncture in twelve to eighteen hours, than to allow a single case, in which a lumbar puncture is indicated, to go unrecognized. Thus, unless you can keep your patients under constant observation with the aid of experienced assistants and nurses, trained in evaluating every sign and symptom, it is far better to perform lumbar punctures on a greater rather than a lesser percentage of your cases. Remember, the closer the surgeon lives with these serious cases the more he will save.

Frequent consultations on skull fracture cases furnish reliable evidence that the majority of surgeons delay this procedure until the patient is in an extremely serious condition. Most of these consultations are requested from the second to the seventh day after the injury, and in a high percentage of the patients thus seen no lumbar

puncture had been done. In many instances, while a lumbar puncture had been performed, only five to ten cubic centimeters of spinal fluid had been removed. Many different explanations for this failure to utilize or recognize the procedure can be advanced. They are best illustrated by the following examples.

1. A patient was recently seen in Indiana in consultation. Because of the severe headaches, extreme restlessness varying with periods of stupor, a lumbar puncture was recommended. The surgeon then explained that he had wanted to do a lumbar puncture, but the family objected. It seemed that the grandfather had had a brain tumor, had been in one of our best hospitals and a neurosurgeon had performed a lumbar puncture. Death followed a few minutes later. This family, therefore, was prejudiced against the procedure. With some difficulty I persuaded the family to allow a lumbar puncture and warned them that they must allow the local surgeon to repeat it if he deemed it necessary. Three lumbar punctures were performed on this patient, in addition to the initial one, and he recovered. This local surgeon is thoroughly convinced of its value.

2. A girl, eight years of age, was seen in consultation with a younger surgeon in Wisconsin. She was in a deep coma and had been ever since the accident, four days previously. On the second day he had called an older local surgeon in consultation, and the latter opposed his suggestion of doing a lumbar puncture. We sent for this older surgeon and discussed the situation with him. I strongly favored spinal drainage. His arguments against it were based solely upon an article condemning the procedure. He frankly admitted that he had only performed spinal drainage a few times and had never removed more than five or ten cubic centimeters of spinal fluid. The lumbar puncture was agreed upon and performed at once and 50 cubic centimeters of spinal fluid were removed. The initial manometer reading showed a water pressure of 280 millimeters. The local surgeon repeated the lumbar puncture five times within the next week, since the patient remained in coma. The child improved and completely recovered. I saw her recently, three years after this episode, and she was in excellent condition with no evidence of posttraumatic sequelae.

3. Recently I saw a patient with x-ray evidence of skull fracture, a known alcoholic individual, who was in coma and had been for eight days. On the second day a lumbar puncture had been performed with removal of only five cubic centimeters of a bloody spinal fluid. We repeated the spinal puncture and a manometer reading

showed a pressure of 250. There was still evidence of blood in the spinal fluid. Fifty cubic centimeters of fluid were removed. The local surgeon expressed grave doubts concerning removal of this amount of fluid, and stated that he would not do it for fear of a herniation of the brain. I explained that this fear was expressed very often by various surgeons, but that I had never had such an accident during a great many spinal punctures. I further explained, however, that I had witnessed autopsies on at least five cases where herniation was present, due solely to the weight of the edematous, hemorrhagic brain which had swollen as far as possible and then, due to weight and further expansion, the brain stem had been shoved down into the foramen magnum. (This, to me, is far more to be feared than is herniation of the brain into the foramen magnum, due to spinal puncture.)

All punctures are performed with the patient in the prone position on his side. As far as possible, struggling or fighting with the patient is avoided. When the patient is first placed on his side and lying in the position he wishes to assume, rather than in the cramped, doubled-up position forced on many of these patients, the field of operation is prepared by painting a rather large area of the back with iodine and washing it off with alcohol. The operator's hands are washed, and gloves should be worn to insure asepsis. Next, a one per cent novocain solution is injected barely under the skin and then deeper and deeper until the bony spine is reached at the site of the puncture. Now, as gently as possible, the patient's back is arched by drawing the thighs upward and the head and shoulders downward. Frequently known or feared associated fractures in the extremities or in the spine will contraindicate this arching of the back. While this arching makes the spinal puncture easier to perform, many of these patients must be punctured without arching the back. The spinal needle is now inserted. The first discharge of fluid may be quite bloody, due to the fact that the needle has punctured a blood vessel. A few cubic centimeters are collected in the first tube and then the needle inserted slightly farther, or slightly withdrawn, and a second tube used for collection of fluid may reveal clear spinal fluid. Again, the first spinal fluid to escape may be clear, shortly turning to a pinkish or typical bloody fluid. Usually, the first fluid to escape is typical blood-tinged spinal fluid. Three or four tubes of the spinal fluid are collected, and if the blood is from a brain injury each tube will be uniformly bloody. One must remember that all fluid should be given a Wassermann test.

The manometer reading, if one is available, is always taken to ascertain the pressure, not to limit the amount to be removed. One should never hesitate to do a spinal puncture because of the absence of a manometer. If the first spinal fluid escapes almost in a stream or very rapidly drops, one can judge that there is increased pressure, but the amount of that pressure may vary greatly. If the fluid flows too rapidly, the trocar can be partially inserted into the hollow needle, thus slowing up the flow. The fluid should be removed gradually. As long as it continues a steady, although very much slowed drop, it is safe to remove fluid. In this way, anywhere from 20 to 60 cubic centimeters of spinal fluid are frequently removed. Some authorities do not hesitate to withdraw fluid as long as it will drop. The point is, the more fluid removed the greater the reduction in intracranial pressure and the greater the improvement in cerebral circulation. The removal of only five to eight cubic centimeters of spinal fluid is only justified in the case of diagnostic or informative punctures. In a few instances, the patient's condition may be so extreme that the surgeon prefers to withdraw only a small amount of fluid, and then repeat the puncture in two to four hours for the removal of an additional amount. This may be occasionally justified, but should not be the rule. It is well to watch the blood pressure while doing a spinal puncture. Occasionally after ten to twenty cubic centimeters have been removed, the patient will show a marked rise in the systolic pressure. This is more prone to happen if the fluid has been removed too rapidly. It is conceivable that this sudden increase in blood pressure might re-develop active bleeding if a meningeal or cerebral vessel has been injured. As a matter of fact, there is only one case in my series where I felt this might have occurred.

When should the spinal puncture be repeated? As a rule, after a spinal puncture has been performed, the restless or delirious patient becomes quiet almost immediately. I have seen patients in coma become lucid within five minutes after the spinal puncture was performed. Not infrequently, the coma disappears within a few hours. If the pulse and respirations have been very slow prior to the puncture, they frequently return to a normal rate within a few moments. On several occasions, a Cheyne-Stokes respiration has returned to a normal respiratory type and rate, even before withdrawal of the needle, providing a sufficient amount of fluid has been removed. The low diastolic rate, 60 or lower, may return to 70 or 80 within a few hours. Absent reflexes may return. Convulsive seizures may disappear

never to return. The improvement in the patient's condition is usually quite obvious to all observers. However, this improvement may not occur with the first puncture, or if it does, it may not be permanent. The coma may persist or may return. A persistent coma for twelve or eighteen hours is a definite indication for the first lumbar puncture. If it continues to persist, a second puncture in eight to twelve hours is certainly indicated. If it recurs after the first puncture, a repetition of the puncture within eight hours, or whenever the coma recurs thereafter, is indicated.

Persistent headaches and extreme restlessness when they occur are definite indications for lumbar puncture. They are usually relieved by puncture but frequently return. Repetitions of the spinal puncture within eight hours, or any time thereafter upon recurrence of this sign or symptom, are indicated. A temperature above 102 degrees, except in children, is an indication for the first spinal puncture. Persistence or an increase in this high temperature is definitely an indication for repeating the spinal puncture. Persistently slowed pulse or respiration or recurrence of the same or, following these a very rapid pulse and respiration or the development of a Cheyne-Stokes type of respiration, when and if they occur and persist, are all indications for doing and repeating the punctures. In fact, the recurrence of any of the signs and symptoms indicating the first puncture, if persistent, are sufficient indications for additional punctures.

In this connection, however, may I point out one important fact: repeating lumbar punctures when operation is indicated increases the fatalities. The review of the hospital records and the 875 cases reported by various surgeons definitely demonstrate that too great dependence is sometimes placed on repeated lumbar punctures. If definite focal signs develop, if convulsions persist, or if the patient continues to grow worse in spite of dehydration and lumbar punctures, the surgeon should consider the need for operative intervention (Group IV). Thus from a study of the hospital records, six cases were found in which the patients showed definite focal signs, paresis or paralysis of the face, arm and leg, said signs developing between the second and fourteenth days. All six of these patients received from two to seven lumbar punctures. All died, and autopsies in three of these cases revealed middle meningeal hemorrhages.

In certain of the cases not yielding to dehydration or repeated lumbar punctures and yet developing no focal signs, a subtemporal decompres-

sion may be indicated in probably less than two per cent of the cases. As a rule, this should be more in the nature of an exploratory decompression performed over or near the site of the fracture if the latter is known. Much of the above concerning spinal punctures may be confusing to remember; certainly, it is not "complicated." The following points outline the indications for this form of treatment in the smaller number of cases needing it.

GROUP III—34 PER CENT SPECIAL TREATMENT—LUMBAR PUNCTURE

Indications

1. Restlessness, delirium, coma, persisting alone or combined with one or all of the following.
2. Pulse below 55 persistently, or becoming rapid after low drop.
3. Respiration below 16 persistently, or of Cheyne-Stokes type, or becoming rapid.
4. Blood pressure showing persistently low diastolic or high systolic pressure with abnormal pulse pressure.
5. At first signs of convulsions or indefinite focal signs.
6. Persistent headache, dizziness, vomiting, papilledema (rare).
7. Rising temperature above 102 degrees.
8. Rigidity of neck, suspicion of meningitis, usually meningismus.
9. Frequently changing reflexes or persistent Babinski sign.
10. Less often indicated in very young.

Treatment

1. Spinal puncture early when value of dehydration alone is questionable.
 - A. Eighty-five per cent first twenty-four hours, 50 per cent first twelve hours.
 - B. Use manometer—regardless of reading, drain 20 to 60 cubic centimeters.
2. Repeat spinal puncture any time after six hours if:
 - A. Signs and symptoms persist or recur.
 - B. Bloody fluid is present with markedly increased pressure.
 - C. If fluid becomes depleted, suspect over-dehydration.
3. Continue dehydration methods after recourse to spinal puncture.
4. Observe closely for Group IV signs.

Finally we come to the remaining ten per cent of cases which have definite indications for operative intervention. A very small number, probably less than two per cent of this group, may

never develop focal signs and yet fail to yield to dehydration and spinal punctures and therefore are subjects for surgery. In most of these a subdural collection of fluid, often from a subarachnoidal leak, will be found as the cause of the continued symptoms. I am convinced that in our desire to be conservative, or because we have spent so much effort in developing dehydration and spinal drainage management, the profession is overlooking this small group of patients who absolutely demand operation if they are to be saved. The autopsy table reveals many cases of extradural and subdural hematomas. Most of them are associated with brain lesions, which probably account for the death; but a certain percentage lived long enough and showed definite focal signs and other symptoms so that one can well conjecture they should have been diagnosed and might have been saved by carefully performed surgery. If one's operative rate in *proved skull fractures* drops below six or eight per cent, he is overlooking operative indications and his mortality rate is too high. If one is operating upon more than ten or twelve per cent of his consecutive run of average skull fractures he is in danger of increasing his mortality rate.

The following chart used in several skull fracture exhibits includes only the operative cases in my average run of skull fractures. In more recent years, several patients requiring operations have been seen in consultation and operated upon, but to prevent an erroneous impression concerning operative rate, these are not included.

GROUP IV—TEN PER CENT
SPECIAL TREATMENT—OPERATIONS

Indications

1. Markedly depressed skull fractures, simple and compound.
2. Middle meningeal hemorrhage, often not apparent in first twenty-four hours.
3. Subdural hemorrhage, often a cause of persistent signs and often a late development.
4. Subtemporal decompression, rarely indicated and never early.

Operative Rules

1. Seldom is operation indicated in first twenty-four hours except in case of:
 - A. A badly compounded skull fracture.
 - B. A rare early progressive extradural hemorrhage.
2. Many depressed skull fractures recover without operation, but all should be elevated after patient's condition warrants, except slightly depressed fractures without signs or symptoms and located outside rolandic neighborhood.

3. Subtemporal or exploratory decompression may be indicated when symptoms without focal signs persist in spite of lumbar punctures.

4. Let common sense and surgical judgment be your guide.

Operations

1. For depressed skull fractures.....	9	(1 death)
2. For compound depressed fractures.....	4	(1 death)
3. For extradural hemorrhage.....	7	(2 deaths)
A. Middle meningeal hemorrhage.....	5	
B. Combined depressed skull fracture and extradural hemorrhage.....	2	
4. For subdural hemorrhage or collection of fluid...	4	(2 deaths)
5. For subtemporal (three) or exploratory (two) decompressions.....	5	(2 deaths)
	29	(8 deaths)

Operative mortality rate, 27.5 %

CONCLUSIONS

1. Proved or practically proved skull fractures only have been used in this study of 3,255 cases in order to have a uniform basis for comparison.

2. Proof of the need of concentrating the attention of the general surgeon upon this subject, and of the necessity of clarifying the confusion which exists because of controversial points in management is furnished by the following mortality rates gleaned from a study of the 2,105 cases of skull fractures in eight Class A Hospitals:

COMPARATIVE MORTALITY RATES

Source	No. of Cases	No. of Deaths	Per Cent
Hospital A	50	24	48.0
Hospital B	1240	508	41.0
Hospital C	32	13	40.6
Hospital D	225	84	37.3
Hospital E	143	49	34.3
Hospital F	34	11	32.4
Hospital G	190	59	31.1
Hospital H	191	57	29.8

3. Almost one hundred surgeons from all parts of the country adopted the above lines of management in 875 cases and reported these to the author. Their treatment by groups follows: Group I, six per cent; Group II, 50 per cent; Group III, 33 per cent; and Group IV, eleven per cent. Their combined mortality rate in the first 400 cases reported was 34 per cent. As the result of concentrating more and more on the management of their skull fracture cases, and the better selection of their cases for the indicated treatment, their mortality rate in the last 400 cases dropped to 25 per cent.

4. George Swift and Temple Fay, whose management of these brain injuries differs only in minor details from that advocated by the author, show mortality rates, in combined serious head injuries and skull fractures, of 12.8 per cent and 13 per cent respectively.

5. As the author has concentrated more and more upon the management of skull fracture cases, his mortality rate has dropped from 21 per cent in 1932 to 17.7 per cent at the present time; whereas, 50 per cent of his deaths were in the first twenty-four hours six years ago, at present 63 per cent

of his deaths occurred in the first twenty-four hours. In other words, as one's treatment of these cases improves, more and more of his deaths will be among those so seriously injured that death occurs in the first few hours; in other words, in those patients where no line of treatment would probably sustain life, while fewer deaths will occur among those who live twelve or twenty-four hours. The following chart gives his present mortality statistics.

MORTALITY RATES

A. In 275 proved skull fractures—17.7 %	
1. Deaths in first twenty-four hours.....	31
a. One minute to one hour.....	9
b. One to six hours.....	12
c. Six to twenty-four hours.....	10
2. Deaths in twenty-four to forty-eight hours.....	6
3. Deaths after forty-eight hours.....	12
Total Number Deaths—49	
B. In 500 serious head injuries without proved skull fracture—10.0 %	
C. Combined skull fractures and head injuries, 775 Cases, 100 Deaths—12.7 %	

RECENT ADVANCES IN CHEST SURGERY*

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"There Alkathos was slain—when the hero Idomeneus smote him in the midst of the breast with a spear; and he fell with a crash and the lance fixed in his heart, that still beating shook the butt end of the spear." Thus Homer describes the first recorded wound of the chest. Sherman aptly states that the road through the thoracic cage is only two to three centimeters in a straight line, yet it has taken surgery twenty centuries to travel it.

The problem of thoracic surgery is the last frontier in the surgical field, and until the past decade it has been more or less an orphan in the surgical home. It has been attacked with trepidation and fathered by many down through the centuries, but no one has been willing to claim the child and rear it to a point of caring for itself. The last great war necessitated its existence and from this point it has become a real member of the surgical family. This field requires the skill of the general practitioner in recognizing the atypical pulmonary pathology, since it is he who first observes the devastating inroads; one needs also an experienced internist of lung disease for his conservation—the radiologist and bronchoscopist for their findings, and last of all, the surgeon. The cooperation of all five are vitally necessary to secure the best results. The fascination of the subject is increased by the diversity of opinions as

to what and who should be subjected to surgery. These differences of opinions emphasize the truth suggested by a stanza in "Rabbi Ben Ezra."

Now, who shall arbitrate?

Ten men love what I hate,

Shun what I follow, slight what I receive;

Ten, who in ears and eyes

Match me: We all surmise,

They this thing, and I that: whom shall my soul believe?

In this particular field of surgery, one is forced to deal with extremely vital physiology even in its normal status, to say nothing of pathologic physiology when the lungs, heart, mediastinum, vascular trunks, pleura or thoracic cage are interfered with by a morbid process. Some understanding of the physiology of respiration is of considerable importance to one undertaking thoracic surgery. The fundamental principle lies in the recognition of a negative intrathoracic pressure. This pressure ranges from 9.0 milligrams of mercury at the end of inspiration to 7.5 milligrams of mercury at the end of expiration. This negative tension draws blood into the great veins and aids in filling the right side of the heart. Tidal air plus complementary air plus supplemental air equals vital capacity. Patients whose vital capacity is almost as low as tidal air should not be subjected to any operation involving an open pneumothorax. The physiology of the chest must be understood before its space is invaded. Its anatomy must be well in mind, and the reactions of this anatomy to manipulation must be appreciated. One must bear in mind that when the abdomen is opened the viscera protrude, but when the chest cavity is opened, the lung collapses, additional stress is thrown on the walls of the large vessels and the mediastinum deviates or flaps from side to side. Even the type and quantity of exudates are different from those of the abdominal cavity. In peritoneal inflammation a fibrinous exudate results, whereas the pleura pours out a serous fluid. Research has made clear the importance of the extensive lymphatics of the pleura, lungs, diaphragm and mediastinum when the absorption of fluid is to be considered. The surgeon has had valuable data given him in the discovery that blood coagulates more easily in the thoracic cavity under the influence of the movement of the organs, especially the heart, than in other parts of the body.

The surgery of pulmonary tuberculosis has been contemporary with the beginning of deliberate thoracic surgery. Old proposals were brought to light and the ideas of Quinke, Spengler and

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

Forlanini were placed into practice in the hope that they would prove beneficial. Surgical therapy for pulmonary tuberculosis was originally reserved for cases of unilateral disease of the fibrotic type. This should still be kept in mind as far as possible. When the pleural space is free, pneumothorax is the first method of choice. This procedure is now the most common for dealing with pulmonary tuberculosis. With good technic and selected cases, the mortality is practically nil. One also finds this procedure advantageous in the diagnosis of lung tumors. If adhesions exist between the chest wall and the lung pleura a surgical release may be necessary. No release should be attempted until after a lapse of four to six months of pneumothorax. It is surprising how many adhesions will break down or stretch under the induced air pressure, and the result is a collapsed lung. Considerable progress has been made in the surgical release of adhesions, and a new term has been coined to fit the occasion, that of pneumonolysis. Pneumonolysis may be done by either the intrapleural or extrapleural method. For the intrapleural, one may make use of the open or closed procedure.

Since closed pneumonolysis is difficult and a potentially dangerous procedure, it should not be carried out until simpler measures have proved valueless. Pneumonolysis is not an end in itself but an adjunct in creating a more perfect pneumothorax. Therefore the cases must be well selected and kept under control. For the introduction of the pleuroscope, a cavity and intercostal space must be chosen which is large enough to permit good orientation and manipulation of instruments. If direct vision is used the pleuroscope should be introduced perpendicularly to the adhesions; if indirect vision is required it should lie parallel and two or three spaces below the adhesions. With apical adhesions an anterior approach in the third or fourth intercostal space is advisable. For lateral and posterior bands the anterior axillary line between the second or seventh intercostal space is best. Upper dorsal bands are located by the posterior route. The actual severance is done by coagulation or galvanocautery.

Thoracoplasty is used for patients who are in a fairly good condition, and who have been in a quiescent stage for sometime, whose cardiac and respiratory functions still have some reserve power, and whose lesions are productive and unilateral. Collapse therapy is cavity therapy and the cavity to be collapsed should be selective. In pleural disease, such as chronic empyema, the purpose is to obliterate the chest cavity by apposi-

tion of the thoracic wall and the lung tissue. The area of rib resection does not depend upon the size of the cavity, but upon the retained elasticity of the compressed lung. Where thoracoplasty is done for apical tuberculosis the collapse is not due to external pressure but to relaxation of the affected lung. This retraction of the lung should be accomplished in three planes; from the side, from above downward, and from front to back. The safety and the clinical success of a thoracoplasty depend upon the application of many details, the selection of patients, the preoperative preparation, the operative technic and the postoperative management. Thoracoplasty should begin with the posterolateral approach. This, if properly carried out, will be sufficient to maintain collapse in the large majority of cases. The anterior approach should be supplemental to the posterolateral method, and then only after completion of the latter and a roentgenogram shows a residual cavity beneath the projecting cartilages. Modern thoracoplasty must include the following:

1. Patient on his side and in the Trendelenberg position, with the hemothorax to be operated upon uppermost. This position negates the gravitation of infectious material from the pressed-out lung.
2. Multiply stage sections at about three weeks' intervals.
3. No more than three ribs removed at any one stage.
4. The removal of the upper ribs first. This begins the collapse where 90 per cent of the cavities occur and prevents infectious material from being aspirated into the lower lung.
5. Retain those ribs which do not lie over important lesions; remove a considerable length of ribs above and below the cavity.
6. Work gently.

Lobectomy has had a slow evolution due chiefly to failure in closing the bronchial opening. The procedure has been used chiefly for bronchiectasis and was confined to lung abscesses. Patients considered as suitable subjects for lobectomy are those in whom the disease is limited to one lobe, with or without involvement of the lingual lobe on the left side or the middle lobe on the right side. The operation is considered justifiable in patients with large amounts of foul sputum, or those who have had frequent pulmonary hemorrhages with small amounts of sputum, and in those where the disease appears to be progressive. Good results will be obtained only if there is a wise selection of cases, a careful course of preoperative treatment, observance of minute

detail in technic and postoperative management. The chief point in technic centers about those using a one stage removal and those preferring a two stage resection. The two stage section seeks to produce adhesions about the infected lobe after the lung is ligated. The lung is permitted to slough away, and there is always the gaunt specter of secondary hemorrhage to complicate the problem. For that reason the single stage is ideal.

Pneumonectomy, the complete removal of an entire lung, is the dramatic sensation of chest surgery. It is a formidable procedure and carries a high mortality rate. However, when one considers that the procedure is carried out for carcinoma or extensive tuberculosis disease the outcome of which is too evident, the surgeon is to be commended for his fortitude in attempting this difficult operation.

Turning now to cardiac surgery we find that Fischer in 1868, in a monumental work, summarized the knowledge then available and made the suggestion that the heart might remotely be considered as a surgical subject. A few years later, that scion of surgery, Billroth, made the dogmatic statement that, "He who should do surgery on the human heart would lose the respect of his colleagues." As late as 1896 Sir James Paget said that, "Surgery of the heart reached the limits set by nature." However, time has erased boundaries and given confidence to the surgeon, and we find the heart and its confines now a surgical organ. Cardiography is no longer an interesting curiosity but a challenge to the surgeon's ability to save lives. Wounds of the heart are now attacked with impunity and each year finds additional successful cases reported. Beck has proved that angina pectoris can be improved by stimulating the circulation of the cardiac muscle. This he has done by suturing the free end of the pectoralis muscle directly to the heart muscle. The work is still more or less in the formative period but there are great possibilities that it will prove to be beneficial in some cases.

Acute suppurative pericarditis has received much attention in surgical literature during the last four decades, but not a great deal has been done about it. The condition is not a clinical rarity; the scarcity of reported cases is more or less indicative that the profession is not awake to the fact that surgical measures can benefit these people. Suppurative pericarditis is just as much a surgical problem as is empyema or brain abscess. It is pus confined within a closed cavity and always associated with dangers of toxemia and septicemia. The sooner drainage is established, the

more favorable is the prognosis. The best exposure is probably the hockey stick incision down the left side of the sternum with the lateral hook over the fifth or sixth costal cartilage. The cartilage is excised, the pleura pushed aside and the pericardium exposed. The pericardium is opened and a Penrose drain or a very soft tube is inserted. Nature will carry on from here. Chronic adhesive pericarditis, Pick's disease, has likewise been attacked by the surgeon—with brilliant results in some instances, moderate in some, and failure in others. It is one of those hopeless conditions where both the patient and doctor are willing to grasp at the proverbial straw. The incision used for acute suppurative pericarditis can be used in chronic adhesive pericarditis with some extension. It is a tedious procedure to separate the adhered visceral and parietal tissues. It may be necessary to remove portions of the pericardium entirely to free the heart and obtain a greater systole and diastole. Again the surgeon deserves commendation for his attempt to aid a hopeless cripple.

Preparation of patients for thoracic surgery is carried out in accordance with general clinical principles. All intrathoracic operations are done with the patient in general deep narcosis, under the hands of an experienced anesthetist. Such a state decreases the action of the vagosympathetic system, and the danger of a sudden and fatal cessation of the heart or respiration is held to the minimum. No roughness is permissible and speed is essential.

Further development of thoracic surgery depends upon two facts; first the maintenance of its self sufficient existence; and second the survey and mastery of the entire field of human endeavor. There must be a union of technical science and activity of the surgeon. In this harmonious relationship lies the fate of future advance. Technical skill is needed, but it must never be allowed to degenerate into an end itself.

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A STUDY OF MENINGEAL PERMEABILITY

WITH SPECIAL REGARD TO THE INFLUENCE OF STERILE MENINGITIS ON THE PERMEABILITY QUOTIENTS OF SCHIZOPHRENICS*

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With the introduction of the lumbar puncture and the advancement of studies of the chemistry of the cerebrospinal fluid the laboratory and the clinician have been brought closer together so that today the latter has at his disposal considerable well standardized data and their correlation with certain clinical pictures for purposes of diagnosis and for guidance to proper treatment. In most instances the laboratory data represent the status of the contents of the cerebrospinal fluid at a given time; that is to say, the approach is static or descriptive. In many cases description of this sort is inadequate for the understanding of the mechanisms underlying the changes observed. In still other cases there are no gross organic changes in the central nervous system and one feels the need for a method of study which goes beyond the realms of static or descriptive findings, in an attempt to understand the pathology responsible for the clinical picture.

Since the cerebrospinal fluid is the fluid which comes into the most intimate contact with the structures of the central nervous system and since the contents of the cerebrospinal fluid depend largely if not entirely upon the ease with which these contents can enter from the blood stream, the dynamics of the relationship between these two fluid systems and the central nervous system presents itself as an important sphere of investigation. Such a study must necessarily go beyond description of states to that of functions. Such an approach as this is not exactly new, but for a considerable length of time, and to some extent at present, findings have been obscure. In the first place it has been difficult to establish the nature of the cerebrospinal fluid as to its physiology and anatomic origin. In the second place, the methods by which the determination of the interchange of substances between the blood and the cerebrospinal fluid have been either too complicated or unreliable.

These investigations have, however, definitely established the existence of some form of barrier between the blood and the cerebrospinal fluid. It has been called "the hemato-encephalic barrier" by Stern and Gautier²⁰ and the "ecto-mesodermic barrier" by von Monakow.¹⁶ The status of our

present knowledge being what it is, there is good reason to use the less specific terminology of Kaffka and Walter,²¹ namely, "the barrier between the blood and the cerebrospinal fluid." The barrier then comes to be thought of as "the mechanism regulating the exchange of substances between the general circulation and the cerebrospinal fluid."⁷ This mechanism includes the choroid plexus, the ependyma and the walls of the central nervous system vessels. The permeability of this barrier is highly selective toward foreign substances introduced into the blood stream and to the normal blood constituents (Stern, von Monakow, Kaffka, Hauptmann, Thiel, Gellhorn, and others). The recognition of the barrier has offered a new approach to the study of normal and abnormal physiology, and in some cases, mental diseases themselves. Many methods have been devised, but most of them have demonstrated weaknesses which have made their use impractical, some being unreliable quantitatively, and others limited by the fact that they depend upon the presence of more or less specific pathology.

Within recent years Walter²¹ devised a new method for studying the barrier function. Its relative simplicity and universal applicability make it a most convenient and reliable means of determining rather specific changes in the barrier under all conditions and opens a way of correlating changes in the constituency of the cerebrospinal fluid with alterations in barrier function. It is this so-called Walter bromide method which is being used at the Psychopathic Hospital in Iowa City and which the writer employed in the course of this study. As used in this institution the test has been slightly modified and as a result some of the earlier findings have been re-evaluated. The change in technic and the justification for it will be explained later.

The Walter Bromide Test: The patient is given an aqueous solution of sodium bromide made so that he receives 0.01 of a gram per pound body weight, three times a day for five days. The solution is made up to 60 cubic centimeters and prescribed, one teaspoonful three times a day, after food, for five days. The morning of the sixth day, before breakfast, ten cubic centimeters of spinal fluid and an equal amount of blood are withdrawn. Reagents are as follows: 30 per cent trichloroacetic acid, to precipitate protein; 0.5 per cent gold chloride solution, (Merck's acid, yellow) gold combines with the bromides to give a brown color; and 0.8 per cent saline, diluting fluid.

The blood is centrifuged at high speed for fifteen minutes, after which three cubic centimeters of clear serum are removed and placed in a test tube. To this are added six cubic centimeters of

*Thesis which won the 1938 Baldridge-Beye Memorial Prize. The author is a senior medical student at the University of Iowa, College of Medicine.

terminated.* The figures on the upper margin represent the ranges of quotients and those on the lower border the number of cases in each division, each division having a range of 0.10, e.g., 2.70 to 2.80. The bulk of the cases (563) falls in the range from 2.50 to 3.10 and this is taken to represent the average range. Since the whole group includes patients with organic disturbances of the central nervous system, we expect the spread to be as it is. Earlier workers have obtained rather similar results, although in some instances they place the upper range of the average at about 3.50.⁷ and ¹¹ This discrepancy may be due to the use of the original Walter method in which the whole series was shifted somewhat higher. Repeated determinations on some of the patients before any therapy had been instituted showed little variation in the

cause some observers⁷ are of the opinion that the protein may influence the distribution of the bromides. The findings in our group would seem to indicate that the protein is influenced by the same factor that controls the passage of bromides into the cerebrospinal fluid. The values given for the normal protein content of the spinal fluid necessarily vary with the method of determination employed. In this institution the modified colorimetric method of Ayer has been used. The protein values of the thousand patients upon whom permeability tests were done are shown in Figure 2, correlated with the respective permeability quotients of each patient. The protein is plotted on the left-hand margin, beginning with fifteen milligrams per cent below and rising to 140 milligrams per cent plus above. On the lower margin are the

values for the permeability quotients, beginning with 1.70 at the left and ending with 3.70 at the right. Each dot represents the correlation of the permeability quotient with that patient's spinal fluid protein. The protein range itself is fairly well placed between 20 and 45 but there is wide scattering in the upper levels. Again it must be remembered that these cases include patients with organic diseases of the central nervous system. From the standpoint of the correlation between the permeability quotient and the protein content we see at most a tendency for the association of a high protein concentration with a low

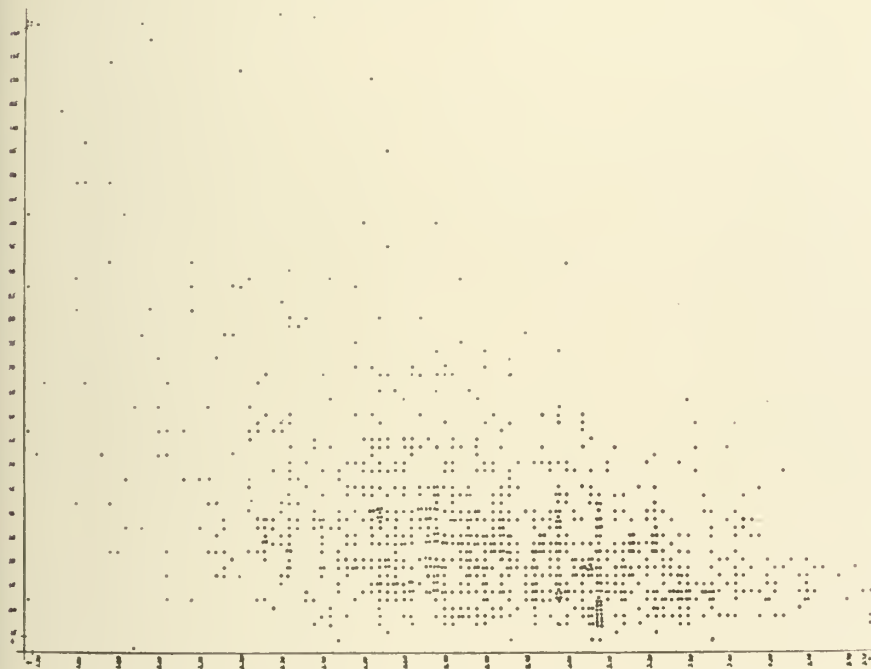


Fig. 2. Protein Permeability Quotients. Correlation of 1000 cases.

permeability quotient, and we may consider it a fairly constant entity for a given condition. The influence of age, menstruation or pregnancy has little or no effect,⁷ although there is still some consideration to be given in the case of children as will be shown later. Individual variations from time to time are from 0.06 to 0.15, which is negligible since it does not exceed to any extent some of the variations in the limitations of experimental error in colorimetric determinations.

Of particular concern is the relationship of the spinal fluid protein to the barrier permeability, be-

cause some observers⁷ are of the opinion that the protein may influence the distribution of the bromides. The findings in our group would seem to indicate that the protein is influenced by the same factor that controls the passage of bromides into the cerebrospinal fluid. The values given for the normal protein content of the spinal fluid necessarily vary with the method of determination employed. In this institution the modified colorimetric method of Ayer has been used. The protein values of the thousand patients upon whom permeability tests were done are shown in Figure 2, correlated with the respective permeability quotients of each patient. The protein is plotted on the left-hand margin, beginning with fifteen milligrams per cent below and rising to 140 milligrams per cent plus above. On the lower margin are the

*The permeability quotients and protein determinations of all the cases in addition to those done by the author were taken from the records of the Psychopathic Hospital.

Investigation of the relationship between various mental diseases and barrier function is neither original nor new to the literature. For concise presentation and summary one may refer to the excellent book by Katzenelbogen already mentioned in this paper. Therefore, this particular phase of the work as now presented merely serves to continue a study which has occupied many workers. Figure 3 illustrates the findings obtained in the course of investigation undertaken recently in this hospital.

The most striking correlation is that which is found in the organic mental diseases, especially those in which there is a disease of the small caliber blood vessels. The general paretics (g. p.) demonstrate quotients that fall below 2.65, most of them being distinctly below our so-called normal range of 2.50 to 3.10. Similar results are found in the cases of psychosis with cerebral arteriosclerosis (p.c.a.). At the other end of the scale we find the various subdivisions of schizophrenia (sch.), but the results in this group are not quite in keeping with reports of earlier investigations,^{7 and 9} although the majority of the cases tend to occupy a level above the lower margin of the normal range. Some ten per cent are actually below this level and about 60 per cent are within the normal range. The other 30 per cent are above 3.10. Those cases designated as psychopathic personality (p.p.) show a distribution rather similar to the schizophrenics. It must be added that the majority of cases is composed of the so-called schizoid psychopaths which Malamud⁹ has previously found to tend to have a high permeability quotient. In the group of primary behavior disturbances in children (p.b.d.) there is a more or less similar distribution. Whether this is a matter of age or pathology is as yet speculative. Most workers believe that children have high permeability quotients, but there are also others who consider them to be low. If it is a matter of age then the associated disturbance has little significance, but if this is truly an alteration in barrier function, one must consider the organic factors at work in this disturbance. The so-called psychoneuroses proper (p.n.), (which include the hyster-

ias and psychasthenias), and the mixed psychoneuroses (m.p.n.) all show a tendency toward high permeability quotients; whereas, the actual neuroses, (which include the anxiety neuroses and neurasthenias), fall nearly entirely within the normal range. The last group, the manic depressive psychoses (m.d.p.) in all their subdivisions show the bulk of the cases to be within the normal range, although there is some scattering with a slight preponderance below normal.

So we see that the status of the permeability quotient cannot be taken as a diagnostic test in the differentiation of purely psychopathologic pictures, but rather is an indication of altered physiology. This is emphasized in terms of the low quotients found associated with the presence of an

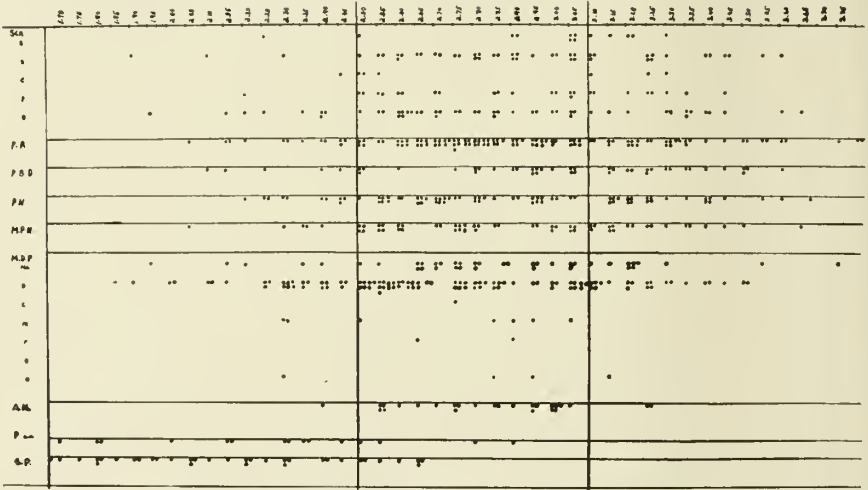


Fig. 3. Permeability quotients demonstrated by patients in the various groups of mental diseases. (See text for key to symbols.)

organic psychosis, especially those where the cerebral vessels or the meninges are affected, yielding as we have seen an increased passage of substances from the blood into the cerebrospinal fluid. It is possible that similar changes in physiology, but in the other direction, are responsible for the high permeability quotients in some of the schizophrenias and other diseases.

With the observance of changes in barrier permeability in the course of disease processes, one's attention is drawn to the possibility of artificially altering this change in the direction of normalcy or at least in a direction opposed to that characteristic for the given disease. In some cases where this has been attempted the modus operandi has been little understood. In others the changes obtained have differed from those anticipated. The objectives in different instances have been in some cases a direct attack upon specific etiologic factors in the course of which attack there has been a

change in the permeability quotient. In other instances the objective has been to alter the permeability with the idea of facilitating the passage of substances from the blood into the cerebrospinal fluid, either foreign or normally present in the blood stream.

One obstacle to the work done thus far has been the necessity of introducing elements into the blood which of themselves could have harmful side actions or serve as adjuncts to the destructive action of other substances.⁷ To combat this situation and to experiment upon the issue for its own sake, there has been some work done with the idea of producing an artificial (sterile) meningitis through the introduction of substances directly into the spinal fluid. The idea of increasing barrier permeability by provoking an inflammatory reaction in the meninges is a result of clinical observations in cases of toxic infectious meningitis wherein one finds a tendency toward an increase in the barrier permeability to the passage of substances from the blood into the cerebrospinal fluid. (Further reference will be made to this later.) It must be noted here that where the objective has been to alter the barrier permeability, little effective work has been accomplished therapeutically. On the other hand, where the objective has been to remove or modify known or suspected etiologic factors of a given disease, there have been changes in the permeability and good therapeutic results. In this regard I wish to refer to the work of Malamud and Wilson¹⁰ on the use of malaria in the treatment of general paresis. As has already been shown, the general paretics show a rather consistently low permeability quotient. In all cases in which there were good remissions in the course of treatment and observation, there was a concomitant change in the permeability quotient back to the normal level. In the remaining cases, the less successful the malaria therapy, the less was the change in the permeability quotient. In those cases in which the treatment failed altogether, the permeability quotient dropped even lower than the original determination. From a technical viewpoint, histopathologic studies¹⁰ have shown that malaria affected the vascular disease so that the bromide distribution was related to the condition of the vessels rather than the blood itself, i.e., to the condition of the barrier, and not the colloid-crystalloid state in the two systems. Of particular interest are the findings in a series of cases of schizophrenia, in which treatment with intraspinal injections of mechohyl has been started. It is this work which has particularly occupied the writer* and it is with these cases, because they represent

a new and original attack upon schizophrenia, that I wish to dwell at some length.

The distribution ratio of bromides in schizophrenics (210 cases) in an earlier series⁴ showed 60 per cent with a permeability quotient range of 3.2 to 4.3, 38 per cent with a range of 2.8 to 3.2, and two per cent below 2.8. A later series (Fig. 3) showed 30 per cent above 3.1, 60 per cent in the normal range and ten per cent below normal. The second series demonstrates the shift to lower levels of readings obtained by using the modified Walter bromide test. At all events schizophrenia has been associated with high permeability quotients as has already been mentioned and it is known that many of the low permeability quotients found in the course of investigation are due to the presence of active tuberculosis, cerebral arteriosclerosis and acute infections. In addition, some of them have had a passive decompensating type of schizophrenia,¹⁵ which tends to have a lower permeability quotient. Therefore, we may assume that schizophrenia uncomplicated by somatic disease will characteristically demonstrate a high permeability quotient. It has also been found that "the amount of iron in the walls of the cerebral vessels as well as in the tissues is closely correlated with the bromide distribution."⁹ These and other observations justify an attempt to understand the pathogenesis of schizophrenia on the basis of fluctuations in the condition of the cerebral vascular network, and hence the barrier between the blood and cerebrospinal fluid. Furthermore, a number of investigators have emphasized the relationships between the functions of the hypothalamic centers and behavior disturbances in schizophrenics.^{1, 6 and 17} It has also been shown by Cushing and others^{2, 3, 4 and 18} that acetylcholine has a definite effect upon the parasympathetic system and especially the hypothalamus. The opinions of these workers offer sufficient justification for the use of acetylcholine in some way in an attempt to influence the course and symptoms in schizophrenia. In addition to this and of particular import for this paper, it is known that acetylcholine injected into the spinal canal will induce an inflammatory (sterile) reaction in the meninges. As was mentioned elsewhere it is reasonable to believe that such a reaction would influence the barrier permeability in much the same fashion that toxic infectious meningitis did. Since we have shown that schizophrenics tend to have high permeability quotients there is thus another justification for the use of acetylcholine in this series of experiments. There are other features which deserve mention at this point. The intraspinal injection of the drug renders its action more effective

*All experimental work was performed in the laboratories of the Psychopathic Hospital, State University of Iowa.

tive, first, because the concentration of choline esterase in the spinal fluid is much lower than it is in the blood; and, second, because the action of any drug on the central nervous system is greatly facilitated by its presence in the cerebrospinal fluid. In the present series of cases mecholyl (acetyl-beta-methylcholine) was employed instead of acetylcholine, the former being a choline derivative approximately 100 times as potent as acetylcholine on the basis of its resistance to the choline esterase.¹⁹

Because the number of cases studied is yet small, this paper will concern itself primarily with the physiologic changes encountered in the course of treatment rather than with the therapeutic results, the latter requiring time and judicious caution in advance of enthusiastic assumption of anticipated results.

The procedure has been as follows. A patient in whom a diagnosis of schizophrenia has been made receives a course of sodium bromide as described previously, and his permeability quotient is determined. At the time of withdrawing the spinal fluid he receives a small initial dose of mecholyl, usually 0.3 of a milligram. He is then carefully observed for systemic and local signs and symptoms. Systemically these consist of stiffness of the neck, elevated temperature, fall in blood pressure, cyanosis and a positive Kernig sign. Locally one looks for an elevated spinal fluid cell count (leukocytes per cubic millimeter) and a high spinal fluid protein. If these signs and symptoms present themselves the dosage is not repeated, and if marked, the patient receives atropine, 0.01 of a grain subcutaneously. If the initial dose was unattended by the systemic reactions the drug is administered three to five times a week in increasing amounts, depending upon the condition of the patient. A permeability quotient determination is made approximately every two weeks in the usual way. Arbitrarily the course is set at thirty injections. Modification and changes in the routine will be instituted as needed, when a large number of cases have been studied.

The following tables represent the records of the courses of ten patients in whom treatment was started and in some cases is yet in progress. In each table dosage is expressed in milligrams, mecholyl solution being prepared as 0.2 milligram per cubic centimeter; cells indicate leukocytes per cubic millimeter; protein, milligrams per 100 cubic centimeter; and P stands for a puncture and no injection.

Case 1. Early in the course of treatment the patient had some chills and fever along with a rise in the spinal fluid cell count and protein. He gradually became tolerant to doses of 0.8 and 0.9

of a milligram without symptoms, despite changes in the spinal fluid. Four days after the last injection the permeability quotient was 1.04 lower than the original permeability quotient.

CASE 1, H. B.				
Date	Dose	P. Q.	Cells	Prot.
3/26	P	2.63		
5/9	P			26.6
5/6	P		1	
5/11	P		2	20.0
5/19	0.5		1	28.8
5/21	P		650	
5/24	P		75	26.6
5/26	0.4	1.75	40	80.0
5/28		2.54	575	36.6
6/2	0.4		20	25.0
6/7	0.5		45	23.5
6/9	P		80	80.0
6/11	0.5		30	59.2
6/14	P	1.48		
6/16	0.5		80	24.2
6/19	0.5		200	35.1
6/21	0.6		55	42.3
6/23	0.6		40	26.6
6/25	0.7		90	23.5
6/29	0.8		65	27.4
7/1	0.9		165	28.5
7/2	0.9	2.30	325	33.3
7/6	0.9		60	24.0
7/9	0.9		60	36.3
7/12	0.9		160	57.1
7/14	0.9		240	74.5
7/16	0.9		250	66.6
7/19	0.9		155	72.7
7/21	0.8		225	72.7
7/23	0.8	2.38	275	42.1
7/26	0.8		75	53.3
7/28	0.9		400	72.5
7/30	0.8		100	
8/2	0.8		4	114.3
8/4	0.8		275	44.9
8/6	P	1.44	200	64.5
8/9	0.8		105	54.4
8/11	0.8		460	86.6
8/13	0.8		252	139.8
8/16	0.8		155	85.1
8/20	P	1.59	141	64.5
Total Dosage = 22.1				
Time = 156 days				
First P. Q. = 2.63				
Lowest P. Q. = 1.44				
Final P. Q. = 1.59				

Case 2. No symptoms of meningismus were present, despite fairly marked reaction in the spinal fluid. One week after the last injection the permeability quotient was 0.71 lower than the original permeability quotient.

CASE 2, J. H.				
Date	Dose	P. Q.	Cells	Prot.
3/26	P	2.21		
5/1	0.3			31.2
5/3	0.4		1	
5/5	0.5			30.0
5/7	0.6		4	30.3
5/11	0.5		125	57.1
5/19	0.5		40	66.6
5/21	0.5		1000	88.8
5/24	P		240	143.8
5/26	0.4	1.44	150	160.0
5/28	0.5	1.50	325	160.0
6/2	0.5		160	114.3
6/4	0.4		250	94.0
6/7	P		175	88.8
6/9	P		115	70.0
6/14	P	1.72	75	57.1
6/16	0.5		55	55.5
6/19	0.6		70	47.0
6/21	0.6		60	53.3
6/23	0.6		90	66.6
6/25	0.7		45	72.7
6/29	0.7		90	69.4
7/1	0.8		95	72.5
7/2	0.8	1.57	115	76.2
7/6	0.8		45	56.0
7/9	0.8		95	72.7
7/12	0.9		140	80.0
7/14	0.9		140	90.0
7/16	0.8		300	100.0
7/19	0.9		170	123.1
7/21	0.8		450	263.0
7/23	0.8	1.46	300	133.0
7/26	0.8		70	145.4

CASE 2, J. H.

Date	Dose	P. Q.	Cells	Prot.
7/28	0.9		450	128.1
7/30	0.8		500	129.0
8/6	P	1.50	62	77.6
Total Dosage = 18.30				
Time = 132 days				
First P. Q. = 2.21				
Lowest P. Q. = 1.44				
Final P. Q. = 1.50				

Case 3. The course in this case was asymptomatic. One week after the last injection the permeability quotient was 0.10 higher than the first permeability quotient, even though it was consistently lower during the entire course of treatment. No explanation is available other than that due to possible error in technic.

CASE 3, Co.

Date	Dose	P. Q.	Cells	Prot.
3/26	P	3.28		
3/27	0.15			
4/1	0.3			
4/3	0.4			
4/6	0.5			
4/13	0.55		6	21.0
4/15	0.65			
4/17	0.5			
4/21	0.7		10	28.5
4/24	0.9		30	24.4
4/26	1.0		60	20.0
4/30	P		300	18.2
5/3	P		90	
5/7	P		30	21.0
5/11	P		15	30.7
5/19	P		12	22.2
5/21	0.5		6	18.2
5/24	P		24	32.0
5/26	0.5	2.83	21	26.6
5/28	P	2.29	21	32.7
6/2	0.5		25	28.8
6/4	0.5		190	28.8
6/7	0.5		100	30.0
6/9	0.3		160	35.0
6/11	0.5		135	36.6
6/14	P	2.54	80	29.0
6/16	0.6		40	31.2
6/19	0.6		125	39.2
6/21	0.6		75	
6/23	0.7		190	57.1
6/25	0.7		110	40.0
6/29	0.8		40	47.0
7/1	0.9		115	41.7
7/2	0.9	2.43	400	44.9
7/6	0.9		25	26.6
7/9	0.9		40	40.0
7/12	0.9		110	42.5
7/14	0.9			
7/16	0.9		150	57.1
7/23	P	3.38	50	36.4
Total Dosage = 19.25				
Time = 118 days				
First P. Q. = 3.28				
Lowest P. Q. = 2.29				
Final P. Q. = 3.38				

Case 4. No symptoms of meningitis were observed. This patient was started on acetylcholine, but without encouraging reaction; after nine injections mecholyl was substituted. The final permeability quotient was 0.85 lower than the first permeability quotient.

CASE 4, V. K.

Date	Dose	P. Q.	Cells	Prot.
7/28	0.5			
7/30	0.75		30	53.3 ac. cho.
8/2	1.0		8	80.0
8/4	1.0		20	76.9
8/6	1.0	2.27	80	59.7
8/9	1.25		38	74.7
8/11	1.25		14	76.9
8/16	1.5		11	94.1
8/17	1.5		16	94.1
8/20	0.8	2.04	49	102.5 mech.
8/25	0.4		12	121.2
8/27	0.3		470	178.9
8/30	0.4		156	181.8
9/1	0.4		170	178.9
9/3	0.45		210	111.1
9/8	0.5		50	188.0

CASE 4, V. K.

Date	Dose	P. Q.	Cells	Prot.
9/10	0.5		250	142.9
9/13	0.6		200	90.9
9/15	0.6		110	117.6
9/17	0.6	1.33	650	133.3
9/23	P		225	133.3
9/28	0.3	1.59	250	129.0
10/1	P	1.55	210	97.5
10/4	0.3		140	178.3
10/6	0.3		250	133.3
10/11	0.4		215	250.0
10/13	0.4		200	181.8
10/15	0.4	1.51	250	153.8
10/22	0.4	1.42	130	200.0
Total Dosage = 17.30				
Time = 86 days				
First P. Q. = 2.27				
Lowest P. Q. = 1.33				
Final P. Q. = 1.42				

Case 5. No symptoms of meningitis were present despite very marked changes in the spinal fluid findings. One week after the last injection the permeability quotient was 0.99 lower than the original permeability quotient.

CASE 5, J. E.

Date	Dose	P. Q.	Cells	Prot.
6/15	P	2.56	1	40.0
6/19	0.3		2	
6/21	0.4		10	31.2
6/23	0.5		15	28.5
6/26	0.5		12	23.5
6/29	P			
7/1	0.6		15	27.5
7/2	0.6	2.28	25	28.9
7/14	0.7		18	60.0
7/16	0.4		256	
7/19	P		900	181.8
7/21	P		745	129.0
7/23	0.4	1.77	150	123.0
7/26	0.4		160	219.2
7/28	0.4		800	100.0
7/30	0.3		1250	285.7
8/2	P		255	243.7
8/4	0.4		105	133.3
8/6	0.4	1.33	620	117.6
8/9	0.6		304	307.7
8/11	P		339	243.9
8/13	0.4		165	344.8
8/16	P		358	277.7
8/20	P	1.57	33	157.4
Total Dosage = 7.30				
Time = 66 days				
First P. Q. = 2.56				
Lowest P. Q. = 1.33				
Final P. Q. = 1.57				

Case 6. No symptoms of meningitis were observed. There was a rather marked increase in the spinal fluid findings. Despite an interrupted course the permeability quotient changes are typical. The patient was sent to a State Hospital before the course could be completed.

CASE 6, G. M.

Date	Dose	P. Q.	Cells	Prot.
5/18	P	3.06		42.0
6/21	0.3			36.6
6/23	P		20	
6/26	0.4		8	20.2
6/29	0.5		70	24.7
7/1	0.6		125	36.6
7/2	0.6	2.59	65	
7/6	0.7		40	28.0
7/9	P		25	
7/12	P			
7/14	0.7		140	32.0
7/16	0.7		360	
7/19	0.7		450	66.6
7/23	0.4	1.74	225	80.0
7/26	0.6		200	86.2
7/28	0.4		350	76.2
7/30	0.4			
8/2	0.4		112	140.8
8/4	0.6		410	93.0
Total Dosage = 8.0				
Time = 78 days				
First P. Q. = 3.06				
Lowest P. Q. = 1.74				
Final P. Q. = 1.74				

Case 7. This patient experienced some discomfort from the injections, but not progressively. There was a marked cellular response. One week after the last injection the permeability quotient was 0.81 lower than the first permeability quotient.

CASE 7, G. J.

Date	Dose	P. Q.	Cells	Prot.
10/5	P	2.83	2	30.6
10/13	0.1		1	30.0
10/15	0.2		1500	39.2
10/18	P		65	40.0
10/20	0.2		40	40.0
10/22	0.2		450	66.6
10/25	0.3		400	57.1
10/27	0.2		275	72.7
10/29	0.3	1.68	550	85.1
11/1	0.3		400	80.0
11/5	0.3		300	94.1
11/8	0.3		350	55.5
11/10	0.3		300	60.0
11/12	0.3	1.44	550	90.1
11/15	0.3		325	70.1
11/17	0.3		430	66.6
11/19	0.4		650	66.6
11/22	0.5		600	70.1
11/24	0.6		335	62.5
11/26	0.6	1.41	725	77.0
11/29	0.7		345	77.0
12/3	0.8		425	80.0
12/10	P	2.02	85	61.5

Total Dosage = 7.20
Time = 67 days
First P. Q. = 2.83
Lowest P. Q. = 1.41
Final P. Q. = 2.02

Case 8. This patient was under treatment only a short time, but showed the typical change in permeability quotient. After 1.5 milligrams the permeability quotient was 0.39 lower than the original.

CASE 8, V. J.

Date	Dose	P. Q.	Cells	Prot.
9/7	P	3.08	2	18.2
9/27	0.3		1	21.0
10/4	0.2		6	34.8
10/6	0.2		75	31.4
10/15	P	3.13	15	19.1
10/18	0.1		20	14.3
10/20	0.2		75	21.0
10/25	0.2		12	28.5
10/27	0.3		110	17.3
10/29	0.3	2.69	315	18.0

Total Dosage = 1.80
Time = 59 days
First P. Q. = 3.08
Lowest P. Q. = 2.69
Final P. Q. = 2.69

Case 9. This patient is still under treatment and has so far shown rather marked changes. The cellular and protein response has been very great although the symptoms have been mild. The last permeability quotient is 0.77 lower than the first.

CASE 9, Kr.

Date	Dose	P. Q.	Cells	Prot.
9/21	P	2.43	1	42.2
11/15	0.2	2.47	1	52.6
11/17	P		1500	70.0
11/19	0.2		25	64.0
11/22	0.2		75	95.2
11/24	0.2		110	72.7
11/26	0.2	1.94	250	80.0
11/29	0.3		225	73.6
12/1	0.3		450	80.0
12/3	0.4		450	81.3
12/6	0.5		275	90.9
12/8	0.5		450	78.0
12/10	0.5	1.66	225	66.6

Total Dosage = 3.50
Time = 80 days
First P. Q. = 2.43
Lowest P. Q. = 1.66
Final P. Q. = 1.66

Case 10. This patient received injections only for a short time and was given only 1.2 milligrams of the mecholyl. This caused a change of 1.29 in the permeability quotient.

CASE 10, M. R.

Date	Dose	P. Q.	Cells	Prot.
7/27	P	3.18		25.8
8/4	P		2	23.8
8/9	P		30	52.6
8/11	0.3		12	32.7
8/13	0.3		87	67.2
8/16	0.3		104	77.6
8/18	0.3		226	53.0
8/20	0.4	1.89	171	42.7

Total Dosage = 1.20
Time = 31 days
First P. Q. = 3.18
Lowest P. Q. = 1.89
Final P. Q. = 1.89

SUMMARY

In the course of this study the following features have been demonstrated:

1. The Walter bromide test has proved reliable as an index of barrier permeability.
2. The protein content of the cerebrospinal fluid tends to vary indirectly with the permeability quotient or directly with the permeability, and is influenced by the same mechanism which affects the distribution of bromides.
3. The permeability quotient of patients with mental diseases tends to be characteristic for the disease, but not necessarily for the individual and his disease. The permeability quotient is often significant where there are marked deviations from the normal range.
4. The permeability quotient is influenced by malaria therapy in the treatment of general paresis, tending to rise from subnormal levels to normal.
5. The permeability quotient is influenced by intraspinal injections of mecholyl in the work with schizophrenics, tending to fall from an original high level to a normal or subnormal level.

In conclusion one may say that the use of mecholyl in the treatment of schizophrenia is justified as far as its effect on the permeability of the barrier is concerned, although it is too soon yet to predict its therapeutic possibilities. If the results are in any way comparable to those obtained in the general parietic with malaria, in which cases the permeability quotient was altered, then we may perhaps consider the change obtained with mecholyl at least a good omen.

Acknowledgment: The author wishes to express his gratitude to the Director and Staff of the Psychopathic Hospital for their kindness which made available the material for this paper, and also for the many valuable suggestions offered during the progress of the work.

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new instruments, orthoptic training continues to be the connecting link between cosmetic surgery and the restoration of normal visual function. It involves an understanding of psychology, physiology and pathology and therefore strictly belongs in the realm of medicine.

At the first examination of a squint patient the most important problem is to gain the confidence and cooperation of both parent and child. The probability of a future operation is explained. If the parent does not subscribe to diligent help, regular return and the idea of probable surgery it is better to dismiss the case. The result will be poor, the relatives and friends disappointed and the doctor and his squint therapy will be condemned. The art of the practice of medicine is nowhere better illustrated than in this particular field. He who does squint work must derive real pleasure from association with children; he must have great patience and a sympathetic understanding to captivate the interest of these oppressed and shy children.

ASSOCIATED VERTICAL DEVIATIONS

At the start I want to cite the problem which was first emphasized by the masterful Duane, namely, the association and detection of vertical deviation combined with esotropia. When present

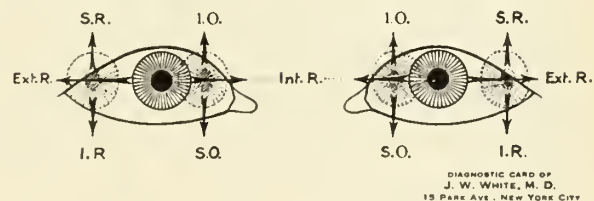


Fig. 1. White's diagnostic card showing fields in which major action of various extra-ocular muscles takes place. The arrows designate field of action of muscle to which they point. Ext. R., external rectus; Int. R., internal rectus; S. R., superior rectus; I. R., inferior rectus; I. O., inferior oblique; and S. O., superior oblique.

TREATMENT OF CONVERGENT SQUINT IN PRIVATE PRACTICE*

J. A. THORSON, M.D., Dubuque

The better results obtained in the past ten years as a result of our increased knowledge of squint management have stimulated the profession to explain these facts, first, to its members, and second, to the layman. Unfortunately the publicity given in the press has not always been helpful, for it has erroneously claimed that, in the correction of this childhood affliction, operation is no longer necessary. Various lay practitioners have tried to capitalize on something of which they know nothing, and have promised the eager public a short-cut to straight eyes by muscle training. Despite their false claims, aided by an awe-inspiring flood of

it is measured both for distant and for near vision with neutralizing prisms. At the same time one notes if the prism correction of this vertical imbalance lessens, to an appreciable degree, the lateral deviation. The same test is made at 33 centimeters, measuring the deviations in the four corners of gaze (Fig. 1.) and the effect on the lateral deviation when the vertical deviation is corrected with prism. The excursion of each eye separately is taken in the cardinal fields to uncover a paresis of an individual muscle; then the other eye is observed simultaneously under cover to discover a secondary overaction of an associate antagonist, such as that of the left inferior oblique in paresis

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

of the right superior rectus. The importance of these tests was "brought home" in a case of esotropia brought in for a hurried examination by his family physician. At this first visit, I hastily advised operation on the lateral muscles because the patient lived too far away to return at frequent intervals. At the second visit the above tests of Duane revealed a marked spastic overaction of the left inferior oblique, and to a lesser degree, of the right internal rectus. There was a varying amount of esotropia in the cardinal fields of gaze except when the patient looked down and to his right; in this position his eyes were parallel. Here the proper and only effective treatment would be, first to correct the overaction of the left inferior oblique.

ALTERNATING ESOTROPIA

In my experience alternating esotropia has yielded results equally as good as the results in the monocular type (Fig. 2). In 39 patients who



Fig. 2. This patient was first seen in March, 1937, at eight years of age. Onset of squint occurred at six months of age. His mother's aunt had esotropia. He had worn a bilaterally equal, moderate, hyperopic correction for two years. His corrected vision was 20/20 with either eye. He had binocular perception Grade 2 (Maddox). With glasses either eye deviated 35 degrees of arc. After three months of diligent orthoptic training, he had excellent stereoscopic vision with slight amplitude of fusion. In June, 1937, a bilateral four millimeter recession was done on the interni; fusion training was continued for six weeks. An average of 18 degrees of esotropia persisted. In August, 1937, a bilateral resection of five millimeters was performed on the external recti. After four diopters of prism for right hyperphoria was incorporated in his glasses he had orthophoria, fusion with good amplitude and stereoscopic vision.

developed alternating squint between the ages of one and four years, Berens¹ obtained third grade (Worth) binocular vision in sixteen; second grade in twelve, and first grade in one, following surgical and orthoptic treatment; summarily, 29 or 74 per cent developed some degree of binocular vision. Various ophthalmologists led by Peter state that normal visual function cannot be had in a true alternating squint because of the complete lack of fusion sense. According to Peter,² the true alternating type who squints at birth or shortly thereafter has no fusion faculty and cannot develop binocular vision. In eight of such cases Berens¹ obtained third grade (Worth) binocular vision in one, partial third grade in two; second grade in three and first grade in one, a total of seven out of eight which acquired some degree of binocular vision. Pugh³ states that patients who have had an alternating squint since birth do not show any

consistent difference of binocular vision from that present in those who have an acquired alternating squint, saying, "Either type of alternating squint can develop steady fusion and stereoscopic vision." Lyle and Jackson,⁴ in their report from the Royal Westminster Ophthalmic Hospital, where the first orthoptic clinic was established in 1930, state that three out of four alternating concomitant convergent cases, with onset of squint at birth, gained single binocular vision, one of these without surgery. These authors state that all five failures (17 per cent) in 27 cases of alternating convergent concomitant strabismus were due to an intractable abnormal retinal correspondence rather than to a lack of fusion sense.

ABNORMAL RETINAL CORRESPONDENCE

Abnormal retinal correspondence, or false projection, is the most intractable abnormality of squint; "it is a binocular condition and not, as is commonly thought, a fault of the squinting eye." In dealing with a series of 400 cases, Pugh³ found that 42 per cent or 168 had abnormal projection. Abnormal retinal correspondence is commonly found in alternating strabismus and is present with either eye fixing. In the analysis of the above 168 patients with abnormal projection, Pugh found that 77 per cent were alternating and 23 per cent unilateral squinters. The following example will illustrate. A boy, six years of age, had had an alternating squint since he was three. With either eye fixing, the other was 20 degrees convergent. He was able to see the bird in the cage when the arms of the amblyoscope were at zero setting. It is obvious that with the one eye turned inward 20 degrees, the image was falling on a point of its retina to the nasal side of the macula (Fig. 3),

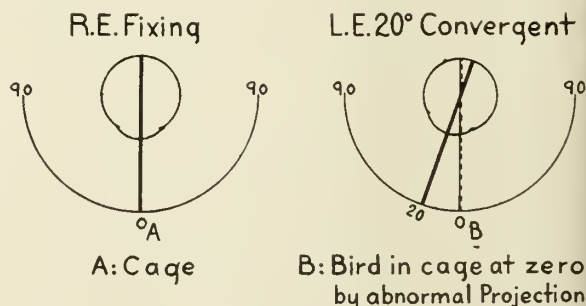


Fig. 3. Right eye sees cage A at zero with macular fixation. Left eye sees bird B at zero in the cage with a paramacular area of the retina (end of dotted line) due to abnormal projection. (Taken from Pugh³.)

but the patient had learned to project the eccentric image straight forward instead of to the temporal side of the object as would an eye with normal projection.

False projection is most readily diagnosed and

treated with a major amblyoscope (Fig. 4) principally because the patient's eyes can be watched by the trainer and because the light from each arm of the machine is reflected on the corresponding cornea of the patient. The patient is asked to move the tubes until the bird is in the cage. In "false projection" one will note that the corneal



Fig. 4. Major amblyoscope (synotophore, synoptiscope, orthoptoscope).

reflex of the fixing eye will be centrally placed, while the reflection in the squinting eye will be on the temporal side of the cornea (See Fig. 5). As the two lights are alternately flashed on and off, the deviating eye which has been using an eccentric point of fixation will turn outward so that the image falls on its macula; in other words, when its light is on and light is off before the fixing eye, the eye with "false projection" will turn out to fix. As the lights are flashed on and off alternately, the arms of the instrument are so adjusted

CORNEAL REFLEXES



Fig. 5. Reflections on corneae as seen when patient with false projection sees bird in cage when using major amblyoscope. (Taken from Lyle and Jackson⁴.)

that there is no shifting of the converging eye when its light is flashed on and the light before the fixing eye off. This position measures the exact angle of squint and the setting for normal retinal correspondence in this case. The treatment is begun at this setting. The lights are flashed on and off alternately and also on and off together so that both maculae are alternately and simultane-

ously stimulated. The arm of the major amblyoscope corresponding to the deviating eye is moved in and out through the true angle of squint so that the cage crosses over the bird from both sides. This will gradually break down the macular resistance and develop simultaneous macular perception.

If the angle of squint is not too large, the same procedure may be accomplished with a stereoscope if it has openings in the top of the hood, through which the patient's eyes can be watched. I use the inexpensive Keystone correcteyescope (Fig. 6) which is a stereoscope set in a box holder, on which tracing may be done, and on which the chart carriers are mounted. The separate charts may be moved closer together or farther apart, up or down separately, as the case may demand. With the bird and cage charts in the average position for orthophoria, base out prisms are placed in the



Fig. 6. The correcteyescope is on the table. Openings through which the patient's eyes can be watched have been cut through the top of the stereoscope hood. Either slide may be moved in, out, up or down.

slots until there is no movement of the deviating eye when it fixes as the fixing eye is quickly covered by passing a blind in front of the stereoscope hood. Brighter illumination may be used on the chart for the amblyopic eye in the case of monocular squint. Now the chart (cage) may be moved in and out from either side of this setting, breaking down macular resistance, developing simultaneous macular perception, thus correcting "false projection." It is essential that abnormal retinal correspondence be corrected before fusion training is begun; otherwise such treatment will tend to establish more firmly the "false projection." In the practice of the average ophthalmologist, the important and highly technical work of correcting "false projection" cannot be shifted to the ordinary office assistant. Since the amount of squint work does not warrant the acquisition of a highly

trained technician, the oculist must do the task himself. He must devote at least two periods a week to each candidate; anything less than this will not bring results.

ORTHOPTIC TRAINING

Orthoptic treatment is begun when the vision is equal or nearly equal in both eyes. Nearly forty years ago, Worth⁵ gave us his excellent classification of binocular vision into Grade 1, simultaneous macular perception; Grade 2, fusion with some amplitude; and Grade 3, sense of perspective. Miss Maddox of England (quoted by Lyle and Jackson⁴) found that there were several degrees of simultaneous perception, depending upon the amount of suppression (macular resistance) present (see Fig. 7). Accordingly she classified

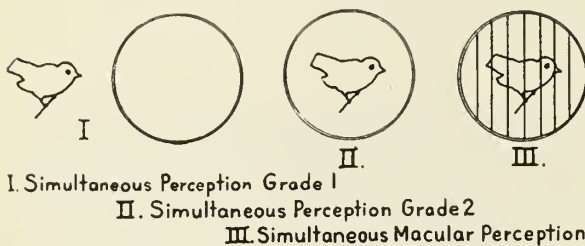


Fig. 7. Graphic illustration of Maddox's three grades of simultaneous perception.

Worth's first grade or simultaneous macular perception as follows:

1. Simultaneous perception, Grade 1; the bird and the cage are seen simultaneously, but the bird cannot be seen in the cage due to a large area of suppression; either the bird or the cage disappears as they approach each other.

2. Simultaneous perception, Grade 2; the bird can be seen in the outline of the cage but the cage bars crossing the bird cannot be seen; the bird is seen by the macula of one eye and the outline of the cage by the paramacular area of the other eye—a central macular resistance persists.

3. Simultaneous macular perception; the bird can be seen behind the cage bars; smaller and smaller test objects finally make the perception bifoveal.

Having acquired bimacular perception, the patient acquires a temporary diplopia. He is able to fuse into one the halves of an object picture. At this stage the points of difference are suppressed. When he gradually attains stereoscopic vision he views two slightly dissimilar pictures, of which the points of difference are not suppressed. There is mental blending of the two slightly dissimilar visual impressions into a composite picture of depth and distance.

My experience with orthoptic training has not

yielded the excellent results claimed by some in straightening eyes; however, to me it has had nearly the same value in the treatment of squint as refraction. Two reasons may be mentioned for orthoptic training alone not yielding better results in overcoming the deviations. Under present circumstances, I have no assistant who understands this work thoroughly enough to assume the responsibility. Many of my patients live in the country and cannot come in regularly because of bad roads in the winter and farm work in the summer. For the same reasons most of us rightfully resort to surgery early as a definite and quick aid in curing squint. I have not been able to correct squint in the large majority of cases with orthoptic training alone; neither have I been able to get good functional results in the majority of cases without training before and after operation.

OPERATION

Vertical anomalies greater than the convergent factor or those which cause an appreciable change in the convergence when neutralized by vertical prisms should be corrected first. McReynolds of Dallas, Texas, is reported as having said,⁶ "Every ophthalmologist who has had insomnia has devised a new operation of convergent strabismus." Regardless of the number they can be divided into two classes; first, those that "lengthen" the internal rectus muscle; and second, those that shorten the external rectus muscle. Of the lengthening operations the recession or retroplacement operation has been quite universally accepted in lieu of tenotomies, because of the precise amount of lengthening and definite anchorage of the severed tendon to the eyeball. I have chosen resection (Lancaster technic) as my favorite shortening procedure (Fig. 8). The amount of resection does not ex-

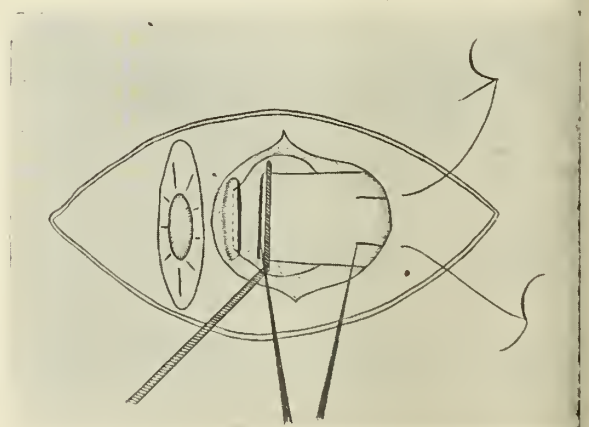


Fig. 8. In the Lancaster technic, two double-armed sutures, one at each edge of the muscle, are used instead of the single double-armed suture as here illustrated. The two sutures insure a normal spread of the muscle. The sutures are first inserted into the stump from within outward, then through the muscle from within outward and then tied over the conjunctiva. The protruding end of the tendon is then excised.

ceed the length of the tendon, which averages eight and one-half millimeters and the tendon is never "shelled out" of its investing sheath. The fascial covering of the muscle is left undisturbed in both this and the recession (Fig. 9) operation.

The choice of which of the two types of operation to be done should not be governed by the surgeon's preference for a particular method, but by the indication in the particular case. When the

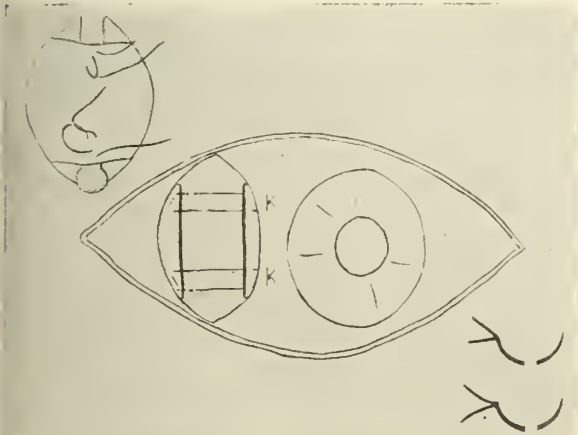


Fig. 9. The uppermost figure shows each double-armed suture looped through the muscle over the hook near the muscle insertion. This is accomplished by passing one of the two needles twice through a "bite" in the muscle. The tendon is then severed near its insertion. The outer strand of each of the two sutures is passed through the episclera a measured distance back of the stump. This distance represents the amount of recession. All sutures are then passed through the muscle stump and the conjunctiva over which they are tied as shown in the large diagram. As the needle is passed through the episclera it must be partially visible as shown on the lower needle of the right diagram. The upper needle shows the portion passing through the sclera to be invisible which means that it may be too deep and consequently may perforate the sclera.

deviation is small, say 15 to 20 degrees of arc and the same for distant as for near vision, a shortening of one or both externi is indicated. Often in an alternating squint of small deviation excursion tests show limitation of external rotation with nystagmoid movements. Shortening of both external recti is here indicated. Later a supplementary recession may be done, if necessary, unless there is a remote near point of convergence. When the cycloplegic or plus lenses definitely reduce the amount of deviation, the case is one of convergence excess and a recession on one or both interni is indicated. Often in testing the deviation for distant and for near vision, even when the patient is wearing his correction, a spasm of convergence occurs when the patient fixes on near objects. Here again recession on one or both interni is done, to be supplemented later by resection of an externus if necessary. In large deviations a favorable plan is to combine the two procedures on one eye at the first operation and

then let subsequent findings govern further operative interference.

In closing I would like to add that calipers and millimeter measures cannot replace experience and good surgical judgment; nor can they be relied upon to give equal results in two different cases. Nevertheless to follow a plan, as outlined by Wilkinson,⁷ of estimating the amount of correction to expect by a certain number of millimeters of shortening or lengthening of a rectus muscle, lends confidence to the surgeon and precision to his surgical technic.

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RETROBULBAR NEURITIS OF UNCERTAIN ORIGIN*

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Retrobulbar neuritis or inflammation in the orbital division of the optic nerve is not difficult to diagnose, even in the beginning when no changes on the head of the optic nerve are visible. A distinct central scotoma, absolute or relative, without retinal metamorphopsia is sufficient for the diagnosis. Much more difficult is the question of cause. The acute form, with which my paper is concerned, is characterized by the sudden onset; when scotoma is very large the patient may not have even light perception. The importance of the sudden loss of sight overshadows everything else and the answers as to other symptoms, especially those preceding the eye symptoms, are often unsatisfactory.

We naturally would expect either an idiopathic inflammation of the optic nerve, as in disseminated sclerosis, a tubercle or luetic lesion, or an inflammation of the nearest paranasal sinuses. Sometimes we find other infections not involving the nose and sinuses to be the cause. In the acute type we are less concerned with poisoning, since the acute cases of poisoning generally offer additional eye symptoms. In disseminated sclerosis the retrobulbar neuritis may precede any other symptoms by several years, and thus we might not be able to make a proper diagnosis as to cause immediately. It is, as a rule, bilateral.

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

I leave this type out of the present consideration because the nature of the disease will evidence itself eventually. More difficult is the answer concerning the cases of so-called hereditary form of neuritis, which may appear in the form of a retrobulbar neuritis, in all those cases where an anamnesis is insufficient.

I am going to discount here the possibilities that tuberculosis or lues might cause retrobulbar neuritis, because I feel that proper procedures will eventually clear difficulties in these cases. Likewise there is little doubt about the origin, when we find a sinus involvement especially of the posterior ethmoid or sphenoid cells. Less unanimous is the answer to the question if other infections, such as tonsillitis, colds or infected teeth can be considered to be causative. If other evidence is lacking we are likely to clutch such straws rather than concede complete failure. At least we will try to improve any abnormal conditions with the faint hope that we will be able to obtain beneficial results as far as the eyes are concerned.

I have found though, that there are cases, where all proper examinations, a most extensive anamnesis and careful observation of the patient fail to give a satisfactory answer to the question: what was the cause? In my practice I have thus far accumulated eight such cases. The first six came within three months of each other in the late winter and early spring of 1927. The patients came from locations as far apart as eighty miles, and no two from the same family or even the same locality. All were bilateral, with very sudden onset and involved ages ranging from ten to fifty-seven years. In none of the cases was the scotoma very large, in no case exceeding fifteen degrees, with vision between 5/10 and 5/60, in four cases absolute for white and colors, in two relative for white and blue and absolute for red and green. In only one case was there a history of a preceding slight cold. Five patients were males and one female. The duration from onset to complete recovery in all cases ranged from three to eight weeks. In all but one case (a boy seventeen years of age, with a relative scotoma for white, vision 5/20 and 5/15) complete examinations were performed and patients were under observation after recovery for two to eight years. I have stressed enough the importance of repeated check-ups to those patients to get satisfactory results. In the longer observed five cases there was no recurrence, nor did anything else appear later to help in establishing a probable cause of the disease. With all the appearance of a small epidemic, such a

consideration remains absurd in view of the fact that the patients came from such different localities, that there was no possibility of contact and that I failed to hear from other sources of similar infections.

The next case concerns a man who was forty-one years of age when he came to me in September of 1931. Two days previous to his first call, he noticed that objects on his left side appeared blurred. By closing his right eye he could not distinguish even larger objects in front of him. With a normal appearing eye a fairly large central scotoma, extending to ten per cent, absolute for white and colors, was found. Since the patient had been under medical observation and care for other reasons, it was not difficult to complete the necessary examinations. For the same reason, many examinations have been performed since, and no light has been shed as to the probable cause. After six weeks of observation the scotoma was found to be smaller (less than ten per cent in each direction), relative for white, and has remained so to the present time.

The last case concerns a woman, fifty-two years of age, whose personal history and complete record, concerning previous diseases and examinations extending over a period of twelve years, had been at my disposal. I have examined the eyes repeatedly, the latest examination five months previous to the onset of the retrobulbar neuritis, when the highly myopic patient was examined for new glasses. At that time there was a vision of 5/7.5 with -6.75D, and the smallest print was read with -5.0. On October 18, 1937, the patient came to me complaining that she could not see with the left eye. An examination disclosed a large absolute scotoma extending to 15 degrees on either side (approximately, since examination is somewhat more difficult due to her myopia), vision under 5/60. For the following month there was little change. At two different times in this interval the scotoma became somewhat smaller and remained so after the second time until now, but no radical improvement could be achieved as the result of my treatment.

I realize that these briefly reported cases have only one thing in common; that I failed to find any probable cause for the retrobulbar neuritis. Otherwise, they are very dissimilar. The first six cases were of short duration, bilateral and led to quick recovery. Because of the shortness of duration I could not possibly credit my treatment as being responsible for the recovery, except possibly my advice to refrain from using the eyes, and to seek general relaxation. In the last two cases the process is unilateral; only the sudden onset

entitles it to the classification under acute retrobulbar neuritis, and the treatment, extensive and intensive, has not brought about much improvement. On the other hand no decided atrophy of the temporal half of the papilla has appeared in either of the two cases.

Perusal of the literature has convinced me that no definite enlargement of our knowledge about retrobulbar neuritis has taken place within the last twenty years. Certain groups are well defined, the etiology unquestioned; but in a large number the etiology remains vague and uncertain and a large number of etiologic factors have been accepted without definite proof. Even with that much liberty we still find cases where the etiologic factor remains unknown. We are not in any more advantageous a position in regard to therapeutic measures, except where nasal involvement is present, and successful treatment of that quite frequently is associated with improvement of the ocular condition. If the use of vasodilators will be of more value than the galaxy of other remedies and therapeutic measures, it is still not definitely shown.

It is a fortunate thing that the cases of acute retrobulbar neuritis are rare. However, just for that reason I feel somewhat discouraged, when I remember that going as far as possible with auxiliary examinations I could accumulate such a large number of cases which remained unsolved. The only thing which I did not do in those cases, was to tear up the ethmoid and sphenoid cell walls, a neglect which might be held against me. After my experiences with such a procedure on the University Clinic in Vienna from 1920 to 1923, I felt that the meager or at least questionable results did not warrant such a procedure in practice. I know that some advocate just such a course and they report occasional good results. In Vienna a comparatively large number of patients with acute retrobulbar neuritis were sent to the two clinics where not only a complete nose examination was made, but, at our request, the smaller posterior sinuses were opened, even if the clinical examination did not reveal any signs of them being infected. As I remember there were about thirty such clinically negative cases involved and in 1923 a joint session of the ophthalmologic and rhinologic society was held, where a lively discussion brought rather negative results. Professor Neuman was definitely in favor of continuing this procedure, since some of the cases sent to his clinic showed decidedly good results. Professor Hayek opposed it violently, since the patients sent to his clinic had not obtained the same beneficial results. I, personally, inclined to the opinion of Professor

Hayek, that the operation necessary on apparently healthy sinuses, was too serious and the number of probable good results far too small.

I am well aware of the fact that I did not bring you anything new, since neither in diagnosis as to the etiology nor in the treatment have I any new suggestions. On the contrary, I expect to learn from the discussion something which might be of value in the future. It seems to me that acute retrobulbar neuritis has too long remained a neglected stepchild and the fact that most cases improve eventually, with or without treatment, does not help to advance our knowledge in this particular field.

Discussion

Dr. Royal F. French, Marshalltown: We should thank Dr. Nowak for presenting this excellent paper and reporting the eight cases he has had under observation. It is evident that he has given the subject much thought. There are several factors in this paper which merit special consideration. By his statement, Dr. Nowak has ruled out all cases of retrobulbar neuritis except the acute cases in which the cause is unknown. Most authorities agree that multiple sclerosis accounts for 50 per cent of the cases; toxinemias, such as alcohol, lead, etc., 15 to 20 per cent; heredity, 10 per cent; those of no demonstrable cause, 10 to 15 per cent; while sinusitis only from 1 to 3.5 per cent. It is in the 15 to 20 per cent of acute neuritis of unknown origin that Dr. Nowak groups his eight cases. He certainly should be admired for presenting this number of cases with recovery and in taking no credit to himself for anything new or phenomenal in his treatment. Fortunately for us and for the patients some recover after a most thorough and extensive treatment, while others recover in spite of the treatment.

In looking back over some of my cases I find that I have not been as fortunate in my percentage of recoveries as Dr. Nowak. A school teacher, having retrobulbar neuritis, had a badly infected antrum on the same side. Pus was washed out from the antrum through an antromental opening, but this did not seem to make any difference and there was a gradual increase in the size of the scotoma. I opened the sphenoid and ethmoid cells but still the condition progressed to a full loss of vision and this eye has remained amblyopic for the past ten years. Another case was a farmer who had a small central scotoma. At no time did he suffer complete loss of vision and, with no surgery, this condition has remained the same for the past two years. It has not always been as easy for me to make a complete and ready diagnosis of retrobulbar neuritis as the textbooks would seem to indicate is possible, for I often find other extenuating circumstances to complicate the picture.

In 1928 Dr. Herzog of Innsbruck made an extensive study of the acute cases, reporting that in certain cases there were large spaces in the bone between the optic nerve and sinus and that these spaces were invaded by the submucosa of the sinus on the one side

and filaments or cellular processes running from the dura of the nerve into the spaces from the other side, so that there was an intimate connection between the nerve and its coverings and the submucosa of the sinus. Any inflammation in the sinus could easily cause inflammation or reaction to the nerve. This probably accounts for the resulting benefit obtained by opening the sinus in those cases which are due to sinus infections.

It is a fact that the nerve fibers from the macula to the papilla are larger in diameter than they are in the retrobulbar position; in other words these fibers are more compressed in the retrobulbar portion. It might be that a slight irritation would cause greater damage at this point; this may also be the reason for benefits derived from operations on the sinus or from packs in the nose or any treatment in the nose which will cause a reaction. If one finds sinus involvement, certainly it should be the best treatment to take care of this infection, but unless there is a definite infection, nasal operation is not indicated.

It has always seemed to me that definite cases of retrobulbar neuritis correspond to cases of Bell's palsy, excluding, of course, traumatic paralysis of the seventh nerve, for, in both instances we have a nerve surrounded by bone; also in both cases, the onset is sudden and many patients will recover without treatment.

Dr. Nowak mentioned the discussion between Dr. Neuman and Dr. Hayek. Having taken work under both men, this interested me and I feel sure that a debate between them would be well worth hearing. I am inclined to believe that I would favor Dr. Hayek's opinion to the extent that nasal surgery is seldom indicated. In addition to all the examinations and tests we are able to make, the patient should be given all possible attention of internists and neurologists. Surely all foci of infection should be eliminated.

This is a very timely subject and until we do have some further definite line of treatment, we will all be on the alert for additional knowledge of these cases.

SUBLETHAL PULMONARY EMBOLI

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The clinical syndrome accompanying acute pulmonary arterial occlusion by embolus has been reviewed extensively during recent years. Much less consideration has been given to the type known as sublethal or non-fatal embolus which to our mind is even more important than acute lethal pulmonary arterial occlusion. Because of this recent interest in the clinical syndrome accompanying acute pulmonary arterial occlusion caused by embolus, we are presenting a brief series of patients whose clinical and pathologic pictures delineate this condition which is even

more important than that of fatal pulmonary embolism. This syndrome we know as sublethal pulmonary embolus in contra-distinction to the lethal type which is mentioned above. This series of cases is being presented because first, there is a clinical picture distinctive of sublethal pulmonary embolus; and second, if this picture of sublethal embolus were more generally recognized, the fatal embolus which often follows might occasionally be prevented.

While it is readily admitted that there is still much to be learned regarding pulmonary vascular accidents, both from a clinical and pathologic standpoint, we do feel that a careful study of the clinical signs and their correlation with the pathologic picture will go far toward a better understanding of this particular entity. It is imperative that clinicians thoroughly understand the underlying pathology and physiology. In order to present this phase clearly, it seems well to consider first the picture presented by the fatal or terminal series of events which lead to death in the fatal embolus.

The fatal embolus presents a dramatic picture which is characterized chiefly by anxiety of the patient, rapid shallow respiration, cyanosis and dyspnea. After reviewing the literature as well as personally observed cases, one begins to feel that the clinical signs and symptoms which may be present with a lethal embolus can be divided into three major classifications. The first of these three groups of symptoms is that which is based upon the pathologic changes present in the lung, the second group includes those symptoms which are generally attributed to right heart strain, and the third of these groups includes those changes which have been considered as due to shock.

To discuss the signs and symptoms of the first group we must have a better appreciation of the pathologic picture as it is encountered at necropsy. In the lethal type of embolus the entire arterial field usually is plugged by a friable laminated clot which is located either in the main pulmonary trunk or in each of the major branches. In sublethal emboli there is usually an infarct which has taken a wedge shaped formation. There are one or more emboli distributed in the smaller and, often, in the larger vessels. This produces a complete obstruction of the vessel which supplies the infarcted area. There is a marked hemorrhagic engorgement. The area is edematous and firm, and the area of edema often extends for some distance beyond the actual area of infarction. There may be a pleural effusion, this is occasionally bloody and is often fibrinous, which in turn may lead to fibrinous adhesions between the

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pleural surfaces. On section the infarcted area is seen to be a deep, reddish purple color, is edematous and engorged. On microscopic section the alveoli are seen to be filled with blood. The portions of lung adjacent are edematous and the alveoli are filled with serum and red blood cells. From this description one may easily understand the origin of the clinical signs which may be present, such as pain in the side, bloody sputum, friction rub and perhaps signs of lung consolidation if the area of infarction is of sufficient size.

Naturally, it follows on the basis of the anatomic changes just presented, that an embolus in a major pulmonary artery may readily produce the symptoms of right heart strain. There will be a dilatation of the right ventricle and conus which in turn leads to a pulsation in the left second and third intercostal spaces, an accentuation of the pulmonic second sound, and a loud systolic murmur. With the return to the left heart cut off, this ventricle more or less completely empties itself within a few beats. This in turn leads to an insufficiency of coronary flow, and increases the right heart dilatation initiated by the pulmonary arterial obstruction. Inefficient right ventricle function leads to increased venous pressure which may cause edema of the tissues. The venous engorgement is reflected in the dilatation of the veins of the neck, which may pulsate.

The signs generally attributed to shock include faintness, pallor, sweating, rapid pulse, fall in blood pressure, vomiting, collapse and cyanosis. Here it is interesting to note that Gibbon, Hopkinson and Churchill,² using normal cats, found that in constriction of the main pulmonary vessels a 60 per cent occlusion of the pulmonary circulation produced no serious results, while occlusion of 60 to 85 per cent produced a fall in blood pressure, rise in venous pressure and failure of the circulation as the blood collected on the venous side. Occlusions of 85 to 100 per cent were always fatal. In contrast to this picture of major obstructions, it is important to recall the alarming clinical syndromes which may be present in minor occlusions where the gravity of the clinical picture is all out of proportion to the extent of the damage in the peripheral circulation. In other words, a relatively small pulmonary infarct (although it damages very little of the peripheral pulmonary bed) may give distressing clinical signs and symptoms.

Certainly one cannot compensate these two pictures unless one considers the possibility of shock being present. On the other hand, of these signs which are considered under the general heading of shock, the fall in blood pressure may

probably be due to the insufficient arterial flow. This in turn probably leads to cerebral anemia, producing faintness and perhaps a still further drop in blood pressure. The fast pulse is, of course, a compensatory mechanism as an attempt of the body to maintain the blood pressure. Cyanosis is probably due to three factors, primarily the decreased capillary flow due to the low arterial pressure, secondly the hypoventilation, and thirdly the increased quantities of reduced hemoglobin which accumulate with insufficient oxygenation. Certainly those of the symptoms which we have listed as due to shock may readily be understood by referring back to the basic anatomic change which has occurred. The outline which we have presented is, in most of its features, the picture of a major catastrophe. We feel that we can more easily delineate the picture of a minor catastrophe by referring to the clinical cases which are to follow. Our material for study consists of six patients in each of whom necropsy was performed. The material naturally may be divided into two groups: the first group includes those in whom the first embolus proved fatal, while the second group includes those in whom a sublethal embolus was present and which may have preceded the lethal embolus. The first group includes only one case. This case is being outlined here chiefly to emphasize the dramatic course which is encountered in lethal pulmonary emboli.

Case 1. This patient, a man forty-two years of age, was admitted to the hospital October 27, 1937. He gave a history of having had recurrent attacks of superior umbilical discomfort for twelve to fourteen years. These attacks of pain were attributed to indigestion. Six weeks before admission he had suffered an acute attack of right upper quadrant pain which was incapacitating and required hypodermic injections for relief. There was no obvious relation of the pain to food or meals. There was no evidence of jaundice. Examination at the time of admission disclosed a mass of rounded contour in the right upper quadrant which was about eight centimeters in diameter, was not tender, and which descended on inspiration. X-ray disclosed a non-functioning gallbladder. On October 8 a cholecystostomy was performed for empyema of the gallbladder and cholelithiasis. His postoperative course was excellent except that he required repeated catheterization. On the eighth postoperative day the patient expressed a desire to void without the use of the catheter. This desire was respected and in about thirty seconds the patient was dead. At necropsy a massive bilateral pulmonary embolus

was found. (Fig. 1.) No source for this embolus could be discovered.

The second group includes five patients, in every one of whom a sublethal embolus was



Fig. 1. Massive bilateral lethal pulmonary embolus present in Case 1. Note the clot extending from the right auricle and filling the entire pulmonary artery.

present. Although in no instance did we feel that these sublethal emboli played a major rôle in the demise of the patient, they may, nevertheless, have caused death by contributing the final blow to an already diminished cardiac reserve.

Case 2. The patient, a woman forty-four years of age, was admitted to the hospital September 6, 1937. At the time of her admission she gave a history of a drawing and pulling sensation in the perineum and pelvis, and pain in the right lower quadrant. These symptoms were aggravated at the time of her menses and were occasionally accompanied by nausea and vomiting. On the day after admission an appendectomy and hysterectomy were performed for chronic appendicitis and chronic subinvolution of the uterus. Her postoperative course was almost entirely uneventful until the evening of the twelfth day when she noticed a slight transient episode of pain in the chest, dyspnea, and a slight cough which was readily relieved symptomatically. Because of the apparent insignificance of this episode the patient was allowed to be out of bed on the following day. While up in a wheel chair she began to feel faint and weak and immediately became cyanotic. She had marked evidences of extreme respiratory distress and soon lost consciousness. At this time her pulse was almost imperceptible. The rate of respiration increased and failure of the circulation became evident. She expired on this, her thirteenth postoperative day. At necropsy her heart was found to be essentially normal. There was a massive pulmonary embolus which was apparently the cause

of death as well as minor emboli which no doubt had preceded the final attack. This major embolus extended from the conus arteriosus and completely filled the main pulmonary trunk as well as all of the right pulmonary artery. (Fig. 2.) The left pulmonary artery was free of emboli as far as could be determined. The source of this embolus was found to be in the inferior vena cava and right iliac vein.

Case 3. The patient, a woman forty-five years of age, was admitted to the hospital September 11, 1937, with the following history: fifteen years previously she had been told by a physician that she had a bad heart. At this time she took digitalis for a short period and apparently felt quite well. Her cardiac disability did not seem to bother her again until two weeks prior to admission at which time she noted weakness, pain in the back, nausea, and excessive perspiration not accompanied by chills or fever. She was not seriously ill but rather felt a little under par. At this time she submitted to a number of chiropractic adjustments with a gradual increase in the severity of her symptoms. On the day prior to admission she noted severe pain in her back, chest, and upper abdomen. At this time she became dyspneic and developed a cough which was productive of bloody sputum. On admission the examiner noted that she was acutely ill, excessively weak and that the skin was moist and cool. She was somewhat dyspneic. The apex beat was diffuse and forceful. There was an apparent enlargement of the heart to the left. There was an



Fig. 2. Right lung from Case 2 which shows the final lethal embolus. In the smaller branches were found sublethal emboli loosely attached to the endothelium of the artery.

irregular fibrillating beat at the apex with a radial pulse deficiency of about 20 beats per minute. Her respirations were rapid, shallow, and there were cog-wheel râles in the bases. There was some tenderness in the upper abdomen and a slight pitting edema of the ankles. At this time her temperature was 100.4 degrees F., pulse 152 per minute and respirations 44 per minute. After admission to the hospital she continually complained of a "pleurisy-like" pain in the right lower portion of her chest. In spite of specific and supportive cardiac measures, including oxygen, she grew rapidly worse and expired on her fourth day after admission. The important necropsy findings were as follows: enlargement of the heart (454 grams) was noted, the coronary vessels were very tortuous, there was a chronic mitral and aortic endocarditis with some stenosis of the mitral valve, and hypertrophy of the left ventricle, left auricle, and right ventricle. The right lower lobe was involved in a fan shaped area of hemorrhagic edema which was so intense as to amount to almost a pure mass of clotted blood. The artery to this lower lobe appeared to be occluded by a relatively recent thrombus which was partially attached to the wall of the vessel. The remainder of the lobes of both lungs was essentially normal. There was a slight arteriosclerosis of the pulmonary vessels.

Case 4. The patient, a man seventy-three years of age, was first admitted to the hospital September 13, 1937, with the following history. For fifteen years he had a left scrotal hernia which occasionally produced some pain in the abdomen, particularly when he was on his feet a great deal. There was a history of constipation for a similar period of time. For eight to ten years there was nocturia and a frequency of four to five times daily and for two years he had some difficulty in controlling the bladder functions. The actual symptoms for which he was admitted to the hospital had been present only a few days prior to his admission. These consisted principally of dyspnea on exertion with a reduced tolerance to exercise and some palpitation. There was likewise weakness which he had described as being present in his legs. On examination at this time, the heart was found to be enlarged to the left. There were no murmurs but the aortic second sound was somewhat roughened and was doubled in character. The pulse rate was 104 and was regular. The blood pressure was 170/90. The chest was emphysematous. There was an increase of tactile fremitus particularly over the bases posteriorly with impairment of the percussion note, and coarse

râles on inspiration and expiration in the same location. There were varicose veins of the right leg. The prostate gland was increased slightly in size and consistency. On September 15, 1937, two days after admission, an electrocardiogram was made which showed signs suggestive of coronary disease. On the next day the patient lost his power of speech; however, it returned to him in the short space of an hour. Except for this brief episode his convalescence was uneventful. He was discharged on his fifth day of hospitalization as improved.

This patient was readmitted November 23, 1937, with the interim history that he had suffered an attack of "flu" from which he had not recovered. Prior to his admission the electrocardiogram was repeated and this gave evidence suggestive of recent coronary thrombosis, although there was no definite history of an attack in this interval. At this time there was a marked shortness of breath, a cyanosis of the lips, mucous membranes, and nail beds, a slight edema of the ankles and pronounced weakness. Examination at this time disclosed the heart tones to be muffled. The pulse was rapid and the heart was fibrillating. There were increased breath sounds and râles at the bases of both lungs and the blood pressure measured 100/70. At this time continuous oxygen, digafolin, and intravenous fluids were given. Following this treatment, the respirations became somewhat less labored, the cyanosis cleared partially and there was an increase in the volume of the pulse. The day after admission the patient became irrational, restless, his breathing much more difficult, the pulse became weaker and involuntary micturition took place. During the next few days he was very restless, markedly dyspneic, much weaker and the cyanosis increased markedly. Finally the patient became very weak, the entire body became markedly cyanotic and the patient expired on his fifth day of hospitalization. At necropsy there were several important findings. There was a moderate arteriosclerosis of the coronary arteries, calcification of the descending branch with narrowing of the lumen, and similar but less pronounced changes in the right coronary artery. The most important findings noted were the multiple infarctions of the lung. To quote in part from the necropsy protocol, "In most of the small vessels there are ancient and recent areas of emboli which are in various stages of organization. These multiple non-fatal emboli have apparently been appearing for some time, perhaps several weeks." The source of these emboli was readily found in the mural thrombus which was present in the right auricle and ven-

tricle. It was extremely interesting to note in connection with the clinical findings that there was no definite area of coronary thrombosis or occlusion which could be found, although this was carefully searched for.

Case 5. The patient, a woman sixty-three years of age, was admitted to the hospital October 18, 1937. For fifty-one years there had been a mass in the anterior portion of her neck which had given her no trouble. However, for the eight years preceding hospitalization there had been palpitation of the heart and for eight months she had suffered a loss in weight. She had been treated with Lugol's solution for the next six months and felt quite well until one month ago. At this time she noted dyspnea, diarrhea, and vague abdominal pains, which rapidly became more marked. Examination disclosed a nervous, anxious patient with tremulous tongue and an enlarged thyroid gland, grade three (on the basis of four) which filled the suprasternal notch; it was hard and nodular but movable. There was exophthalmos, grade two. The heart was enlarged to the midaxillary line on the left. The apex beat was diffuse and the tones booming in character. There was an auricular fibrillation present with a rather marked pulse deficit. The respiration was limited. The blood pressure at this time measured 180/90. X-rays of the chest disclosed a marked hypertrophy of the heart and a substernal shadow which was taken to be the thyroid gland. There was also noted an obliteration of the right costo-phrenic angle to the third rib with congestion of both lower lobes. The red blood cell count was 6.08 millions per cubic millimeter with a hemoglobin of 85 per cent (Tallquist). Examination of the urine disclosed from 3.0 to 1.2 grams of albumin and several pus cells. The basal metabolic rate gave a plus 34 reading. On October 27, 1937, a bilateral subtotal thyroidectomy was done for exophthalmic goiter.

During the first postoperative day, the patient became anxious and nervous and the pulse rose to 148 beats per minute, although her general condition seemed quite good. On the second day, the pulse rose to 149 beats per minute and the respirations to 28 per minute. At this time she became somewhat irrational. On the third postoperative day she seemed to be having considerable respiratory difficulty and cyanosis began to be evident. She expired suddenly on her fourth postoperative day. Examination of the pulmonary arterial tree at necropsy disclosed numerous small non-fatal emboli in the secondary and tertiary branches of both lung fields. There was an in-

farcion of the involved areas which was most marked in the middle and lower lobes on the right and the lower lobe on the left. (Fig. 3.) Other findings of importance included hypertrophy of the heart (weight 567 grams) with thrombosis of the right coronary artery. There was a marked tortuosity of the remainder of the coronary vessels in which there were likewise numerous small atheromatous plaques.



Fig. 3. Left lung in Case 5. Note the small emboli almost completely occluding the branches to the lower lobe.

Case 6. The patient, a woman seventy-six years of age, was admitted to the hospital December 18, 1937. At the time of her admission she stated that for eighteen years she had had a dry cough and for three years a rather generalized weakness. The reasons for which she had sought medical consultation had their onset five days prior to admission and consisted of vomiting, constipation and questionable melena. At the time of admission her abdomen was rotund and there was a slight generalized tenderness although no masses were palpable. On the day after her admission a laparotomy and drainage was performed for volvulus of the cecum and ascending colon. Her immediate postoperative course was quite satisfactory until the evening of the second postoperative day when she grew restless, became somewhat irrational and complained of difficulty in breathing. The following morning her pulse rose to 130 to 136 beats per minute and the respirations to 24 per minute from their previous normal levels. In the late evening on the same day her pulse became even more rapid and she complained of more difficulty

in breathing. During this time the respiratory rate rose to 32 per minute. During the course of the night her pulse and respiratory rates continued to rise with the respirations reaching 40 per minute and pulse 160 beats per minute. There was an even more marked difficulty in breathing and she complained of some pain in the region of the heart. On the fifth postoperative day she felt quite well and her condition was considered to be fair. This happy state of affairs continued throughout the sixth postoperative day as well. On the next day she had a coughing spell, her pulse became thready, cyanosis was evident and respiration was difficult. The cyanosis increased rapidly and the pulse became imperceptible. She expired immediately afterward. At necropsy it was noted that there was a severe atherosclerosis and calcification of the media of the descending branch of the left coronary artery with narrowing of the lumen of this vessel. On examination of the lungs it was found that there were relatively recent emboli in the main arteries to both the right lower and left upper lobes. These lobes of the lungs were completely infarcted. The embolus in the left upper lobe appeared to be of more ancient origin, was somewhat attached to the intima of the vessel and completely occluded the lumen. (Fig. 4.)

COMMENT

From a study of the cases in this last group it at once becomes apparent that the picture in the presence of a sublethal embolus is exactly that presented by a lethal embolus except for the lesser gravity of the symptoms. As was mentioned in the beginning of this paper, lethal pulmonary emboli are characterized by anxiety of the patient, rapid shallow respirations, cyanosis and dyspnea. In our group of cases of sublethal



Fig. 4. Both lungs from Case 6. In this instance note the involvement of the left upper and right lower lobe arteries with absence of emboli in the other arteries. The emboli on the left were definitely attached to the vessel wall and organization of the clot had started.

emboli the predominant symptoms included anxiety of the patient, cough with bloody sputum in one instance, cyanosis, dyspnea, rapid pulse and chest pain. The diagnosis of sublethal embolus must, of course, be suspected in the presence of any or all of these symptoms. Occasionally a patient is seen who has only a slight dyspnea, slight chest pain, and minor evidences of shock. In the differential diagnosis coronary thrombosis and pulmonary arteriolar sclerosis must be considered.

In considering coronary thrombosis a previous history of anginal attacks may be helpful. We must also recall that dyspnea and cyanosis are less marked in coronary thrombosis. Barnes¹ has noted electrocardiographic changes helpful in the diagnosis. He lists the differences in the electrocardiographic tracings between pulmonary embolism and infarction of the posterior basal portion of the septum in the accompanying chart.

Barnes likewise records that Camp has called at-

CHART I. ELECTROCARDIOGRAPHIC DIFFERENCES IN ACUTE PULMONARY EMBOLISM AND IN ONE TYPE OF ACUTE CARDIAC INFARCTION

Type of Electrocardiogram Characteristic of Acute Pulmonary Embolism	T ₃ Type of Electrocardiogram Characteristic of Acute Infarction of the Posterior Portion of the Left Ventricle
S ₁ constantly present and usually prominent	S ₁ absent or, if present, not exaggerated
S-T ₂ Take off usually below zero level	R-T ₂ usually elevated; rarely iso-electric and never depressed
T ₂ diphasic, monophasic, or upright; rarely inverted	T ₂ usually inverted
R-T ₃ occasionally slightly elevated	R-T ₃ much elevated as a rule
T ₃ inverted; may be cove plane	T ₃ usually inverted
Q ₃ frequently fairly prominent; Q ₃ pattern not present	Q ₃ frequently markedly prominent; Q ₃ pattern commonly present
Q ₄ usually within normal limits	Q ₄ usually within normal limits
T ₄ usually upright; may be flat or diphasic	T ₄ usually inverted

tention to the accentuation of the hilus shadow on the side of the occlusion.

In the differentiation from the picture seen in pulmonary arteriolar sclerosis Kaump and Dry³ describe the sequence of events in this latter entity as follows: "In all cases there was a history of dyspnea on exertion; the dyspnea had been present for several years and often had been initiated or at any rate aggravated by an intercurrent infection of the upper part of the respiratory tract. In two cases seasonal asthmatic attacks had occurred for several years. Dyspnea may be the only symptom for a time but it is usually progressive; in some cases it is rapidly so. Distress in the upper part of the abdomen frequently was present and unquestionably was evidence of early congestive heart failure. Once objective evidence of congestive heart failure became manifest, the course proceeded rather rapidly downhill; coughing became a troublesome symptom, edema became massive, and dyspnea became extreme. Cyanosis should occur relatively early, but in this group of cases the patients were not seen at this stage of their illness. In the final stages the signs of marked venous congestion and cyanosis were much in evidence; the patients became irrational and a semicomatose condition ushered in death. While in most respects this is mostly the picture of failure of the

right heart, there are some rather interesting differences; namely, the rapid decline in the last phases, the almost entire lack of response to therapy which ordinarily affords at least temporary relief and often effects a dramatic diuresis with resulting subjective improvement in cases of purely myocardial decompensation. Finally, the most important feature in these cases was the lack of correlation between the ascertainable cardiac changes on the one hand and the degree of physiologic derangement on the other. It is unusual for cardiac disease to be fatal in its first break of compensation if any reasonable therapy is combined with rest in bed."

CONCLUSIONS

1. We have presented the clinical picture characteristic of lethal pulmonary embolus and have reviewed briefly the relationship of the clinical picture to the necropsy findings and to the altered physiology.

2. The clinical and necropsy findings are presented for six patients in five of whom a sublethal embolus was present, producing a clinical picture which we feel is characteristic.

3. In this group in whom sublethal emboli were found the predisposing factors include previous heart disease, four out of five, and obesity, three out of five.

CHART II. RESUME OF CLINICAL CASES

CASE	OPERATION	HEART	BLOOD PRESSURE	PAIN	PULSE	RESPIRATIONS	CYANOSIS	ANXIETY	COUGH
2	Hysterectomy	Normal		Present		Dyspnea			Present
3	None	Auricular fibrillation hypertrophy coronary sclerosis Chr mitral and aortic endocarditis Right heart failure		Present	Rise	Dyspnea			Present and bloody
4	None	Auricular fibrillation ECG ancient coronary thrombus (?) right heart failure	170/90		Rise	Dyspnea	Present	Present	
5	Thyroidectomy	Auricular fibrillation coronary thrombus	100/90		Rise	Dyspnea	Present	Present	
6	Volvulus	Severe coronary sclerosis		Present	Rise	Dyspnea	Present		Present

4. The clinical symptoms which were present and were almost identical to those of a lethal embolus include increased respiratory rate and dyspnea, five out of five, increased pulse, four out of five, pain in the chest, three out of five, and cough, three out of five, the sputum of which was bloody in one instance.

5. We feel that next to the prevention of embolus formation the second most important factor is the recognition of sublethal embolus when it does occur. If these symptoms of sublethal embolus were recognized more frequently, simple prolonged rest might prove valuable in the prevention of the second and often fatal embolic attack.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

CONJUNCTIVITIS IN IOWA*

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Inflammatory diseases of the conjunctiva are frequently encountered in this locality. Many cases recover spontaneously; however, others tend to recur or to become chronic. For the latter reason and in order to prevent the development of serious complications, treatment should be adequate. This study was made to ascertain the relative frequency of the causal agents, inasmuch as one of the most important steps in the administration of adequate treatment is the determination of the etiologic agent. The study covers 620 consecutive cases seen in the Eye Clinic in 1937.

Cultures, smears, and scrapings were made routinely. Cultures were taken with a platinum loop from the lower fornix, and streaked upon five per cent blood agar plates. Special media were used when indicated, e.g., in gonorrheal ophthalmia¹ and angular conjunctivitis. All cultures were incubated at 37 degrees C. for forty-eight hours and were examined for growth at the end of twenty-four and forty-eight hours. Colonies were identified according to their mor-

phology and biochemical reactions as listed in Bergey's Manual of Determinative Bacteriology.²

Conjunctival secretions in the lower fornix or in the region of the caruncle were smeared upon clean glass slides with a platinum loop. Epithelial scrapings were taken with a platinum spatula from the anesthetized upper or lower palpebral conjunctiva. Both smears and scrapings were taken in duplicate. One of each was stained by the Gram method and the other by the Giemsa method.³ Microscopic examination of these slides revealed the etiologic agent in the majority of cases, but the final diagnosis in bacterial cases was made after examination of the cultures.

Clinically several types of conjunctivitis were encountered. For purposes of simplicity they were separated into two main groups; first, catarrhal conjunctivitis; and second, special types of conjunctivitis.

Cases of catarrhal conjunctivitis were divided into three sub-groups; first, acute conjunctivitis which included those commonly referred to as "pink eye," and in addition a few which because of their severity have sometimes been referred to as blennorrhea or hyperacute conjunctivitis; second, subacute types which included cases similar to those of the "pink eye" type but with less abrupt onset and less severe signs and symptoms; and third, chronic types which included all of those cases of probable bacterial origin of more than two months' duration.

The special types included conjunctivitis of the newborn, trachoma, vernal catarrh, lacrimal conjunctivitis and rare types of conjunctival disease (Table I).

TABLE I
CLINICAL TYPES OF CONJUNCTIVITIS

Catarrhal Conjunctivitis	446
Acute	126
Subacute	35
Chronic	285
Special Forms	174
Conjunctivitis of Newborn.....	55
Lacrimal Conjunctivitis	45
Trachoma	39
Others	35
TOTAL	620

ACUTE CATARRHAL CONJUNCTIVITIS

This type of acute conjunctivitis, frequently referred to as "pink eye," was characterized by redness of the conjunctiva, foreign body sensation and a discharge the character of which depended upon the stage of the disease. Early the discharge was watery, but soon became mucopurulent or purulent. Subconjunctival hemorrhages, especially those of the petechial type, were common; they were more prevalent in pneumococcus conjunctivitis. In the more severe infections, corneal involvement was frequently encountered;

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this appeared, after staining with one per cent fluorescein, as small superficial punctate green areas on the epithelial surface. In one case from which pneumococcus was isolated, small round elevated grayish infiltrations which resembled phlyctenules were observed at the limbus.

The series of acute conjunctivitis was composed of 126 cases, in 83 of which pathogenic micro-organisms were isolated (Table II). Some of the 43 remaining cases undoubtedly were due to irritants which were not determined. Some may have been due to viruses or bacteria whose natures are at present unknown, and some were perhaps bacterial in origin but had had treatment before entering the clinic. Staphylococci were isolated from the greatest number of acute cases. Only the hemolytic strains were considered pathogenic. Pneumococcus, ordinarily considered the most common cause of "pink eye" in this locality, was second to staphylococci in this series. This perhaps was due to the preponderance of adults and the relative absence of grammar and high school age patients. Pneumococcus was isolated in pure culture in 28 cases and mixed with other organisms in four others. Streptococci were found in five cases of acute conjunctivitis, one of the hemolytic (beta) type and the other four were *Streptococcus viridans*. The latter organisms were differentiated from pneumococcus by lack of bile solubility, and failure to react with pneumococcus typing sera. Only two cases of gonorrheal infection of the conjunctiva were observed. Both were in adults and were hyperacute in onset, with chemosis of the conjunctiva, swelling of the lids, and profuse purulent discharge. The influenza bacillus was isolated from four cases, but in two of these other organisms were found.

TABLE II
ACUTE CATARRHAL CONJUNCTIVITIS

Staphylococcus	38
aureus	27
albus	8
aureus and albus.....	3
Diplococcus pneumoniae	28
Streptococcus	5
alpha type	4
beta type	1
Neisseria gonorrhoeae	2
Hemophilus influenzae	2
Mixed:	8
Staph. aureus; D. pneumoniae.....	3
Staph. aureus; Staph. albus (n-h); Corynebacteria	1
Staph. albus; Staph. albus (n-h); Corynebacteria	1
Staph. aureus; Streptococcus (alpha)...	1
H. influenzae; Staph. albus.....	1
H. influenzae; D. pneumoniae; Proteus vulgaris	1
Etiology Undetermined:	43
Staphylococcus (non-hemolytic).....	12
No organisms	31
TOTAL	126

SUBACUTE CATARRHAL CONJUNCTIVITIS

This group included those infections similar to "pink eye" but with less abrupt onset, less hyperemia of the conjunctiva, and a watery or mucopurulent but never purulent discharge. This type is particularly prone to become chronic if not adequately treated. Staphylococci were isolated from seven cases of subacute conjunctivitis (Table III). In four of these the organisms were aureus, in one they were albus, and in two cases both aureus and albus varieties were present. Hemolytic staphylococci were isolated, along with other organisms, in two additional cases. Pneumococcus occurred alone in five cases, and mixed with other organisms in one additional case.

TABLE III
SUBACUTE CATARRHAL CONJUNCTIVITIS

Staphylococcus	7
aureus	4
albus	1
aureus and albus.....	2
Diplococcus pneumoniae	5
Streptococcus (alpha)	1
Klebsiella pneumoniae.....	1
Mixed:	4
D. pneumoniae; Escherichia communi- or; Gaffky tetragen.....	1
Streptococcus (alpha); Sarcina lutea..	1
Staph. aureus; Neisseria flava.....	1
Staph. albus; Unidentified gram nega- tive rod	1
Etiology Undetermined:	17
Staphylococcus albus (non-hemolytic)...	9
Neisseria catarrhalis; Corynebacteria..	1
No organisms	7
TOTAL	35

Streptococcus viridans was probably the cause of infection in two cases of subacute conjunctivitis and Friedlander's pneumobacillus was probably the cause of one case.

CHRONIC CATARRHAL CONJUNCTIVITIS

This group included conjunctival infections of probable bacterial origin which were of more than two months' duration. In the majority the conjunctiva showed slight pathology. There was some hyperemia of the lower palpebral conjunctiva and mild papillary hypertrophy accompanied by a slight discharge, which was usually stringy, mucoid or mucopurulent in character. In addition those cases which were apparently staphylococcal in origin were characterized by enlargement and redness of the plica and caruncle. The patients usually complained of their lids being stuck together in the mornings followed by burning and scratching sensations during the day. Also they were unable to read for any appreciable length of time and the lids felt heavy in the evenings.

Hemolytic staphylococci were by far the most common cause of chronic catarrhal conjunctivitis, accounting for 107 cases and perhaps contributing

to ten others out of a total of 285 (Table IV). Pneumococcus was isolated in pure culture from fourteen cases but in nine others was mixed with other organisms. Streptococcus viridans was isolated in pure culture from only one case but was mixed with other organisms in four cases, making a total of five. Proteus vulgaris and aerobacter aerogenes accounted for one case each. Proteus ammoniae probably was the etiologic agent in another case, although a non-hemolytic staphylococcus albus also was isolated. The etiology was not determined in 132 cases, in 61 of which no organisms were found and in 71 there being only non-pathogens.

TABLE IV
CHRONIC CATARRHAL CONJUNCTIVITIS

Staphylococcus	107
aureus	76
albus	20
aureus and albus	11
Diplococcus pneumoniae	14
Hemophilus influenzae	2
Streptococcus (alpha)	1
Proteus vulgaris	1
Aerobacter aerogenes	1
Mixed:	27
(a) Diplococcus pneumoniae and	
Staph. albus (n-h)	2
Staph. albus (n-h) and Coryne-	
bacteria	2
Staph. aureus	1
Staph. albus	1
H. influenzae	1
H. influenzae; H. lacunatus	1
Staph. albus; Staph. albus (n-h);	
Corynebacteria	1
(b) Staph. aureus and	
Staph. albus (n-h); Corynebacteria ..	3
Gram negative rod (unidentified) ..	2
Staph. albus (n-h); Sarcina lutea;	
Corynebacteria	2
Streptococcus (beta)	1
Corynebacteria	1
(c) Streptococcus (alpha) and	
Staph. aureus; Corynebacteria	2
Staph. albus (n-h); Corynebacteria ..	1
Staph. albus (n-h)	1
Staph. albus (n-h); Corynebacteria;	
Gram negative rod	1
(d) Staph. albus and	
Staph. albus (n-h); Corynebacteria ..	2
Staph. albus (n-h)	1
(e) Proteus ammoniae and Staph. albus	
(n-h)	1
Etiology Undetermined	132
No organisms	61
Staph. albus (n-h)	49
Mixed non-pathogens	13
Corynebacteria	9
TOTAL	285

Treatment: Acute and subacute catarrhal conjunctivitis in general responded to the use of 0.5 per cent silver nitrate ointment instilled into the conjunctival sac several times a day. Some forms of therapy were of value in relation to specific etiologic agents, e.g., staphylococcus antitoxin and toxoid for staphylococcic cases,⁴ sulfanilamide for streptococcus and gonococcus infec-

tions, and zinc sulfate for subacute angular conjunctivitis of Morax-Axenfeld. Several non-specific measures were of value; for example, cold compresses, cleansing irrigations, foreign protein shock therapy, and artificially induced fever. The two latter measures were employed chiefly for the so-called hyperacute cases (gonorrheal conjunctivitis) and in others in which corneal complications existed. In chronic catarrhal conjunctivitis the etiologic agent also determined the type of treatment. Some of the staphylococcic cases responded to local measures, e.g., instillation of antiseptic collyria three or four times a day, painting of the conjunctiva and lid margins with two per cent silver nitrate solution, and expression of the meibomian glands. However, the majority required specific immunization with staphylococcus toxoid and autogenous vaccine before considerable improvement was noted. The remaining cases in this group in general responded well to local treatment.

CONJUNCTIVITIS OF THE NEWBORN

Inflammation of the conjunctiva usually developed in the newborn following the instillation of silver nitrate at the time of delivery. Congestion and a slight discharge were noted after birth but had subsided within twenty-four hours. Cultures and smears failed to reveal the presence of bacteria.

Conjunctivitis of the newborn, which appeared in 55 cases in a total of 1306 deliveries, (Table V), developed in one or both eyes from the third to the tenth day. The first sign was generally a slight purulent discharge at the inner canthus. Upon further examination hyperemia of the conjunctiva was observed. In the cases due to staphylococcus the discharge usually became profuse with slight swelling of the lids. Those due to the inclusion blennorrhea virus developed on the seventh or eighth day, and were characterized by subconjunctival infiltration and papillary hypertrophy, particularly of the lower fornix. In several of these cases thin pseudomembranes composed of exudate and desquamated epithelial cells were observed upon the palpebral conjunctiva. Staphylococcus was the most common cause of conjunctivitis in the newborn, there being 27 cases; inclusion blennorrhea virus accounted for nine cases, and pneumococcus for four others. One case of vaccinia virus conjunctivitis appeared as an angular irritation from a vaccinal lesion accidentally transferred to the external canthus. Streptococcus viridans was responsible for one case, and one was apparently due to a mixed infection; i.e., pneumococcus and staphylococcus aureus; in twelve the etiology was not determined.

TABLE V
CONJUNCTIVITIS OF NEWBORN

Staphylococcus	27
aureus	24
albus	3
Inclusion blennorrhoea virus.....	9
Diplococcus pneumoniae	4
Streptococcus (alpha)	1
Vaccinia virus	1
D. pneumoniae and Staph. aureus.....	1
Etiology Undetermined:	12
Neisseria catarrhalis	1
Neisseria sicca	1
Sarcina lutea	1
Staph. albus (non-hemolytic).....	8
No growth	1
TOTAL	55

Treatment: Bacterial conjunctivitis of the newborn responded rapidly to the usual conjunctival antiseptics; however, the course of virus conjunctivitis was not influenced by such measures, except insofar as they prevented the development of secondary bacterial infection.

LACRIMAL CONJUNCTIVITIS

Lacrimal conjunctivitis, or that type associated with stenosis and infection of the lacrimal passages, was characterized by the presence of a purulent discharge which collected at the inner canthus. Pressure over the region of the lacrimal sac usually resulted in the regurgitation of pus through the canaliculi. The amount of discharge was out of proportion to the hyperemia of the conjunctiva. In all cases irrigation of the lacrimal passages revealed the presence of a stenosis. Pneumococcus, the most common cause, occurred alone in fifteen cases and mixed with other organisms in four others (Table VI). Hemolytic staphylococci alone were isolated from eight cases and perhaps were a contributing cause in five others. Streptococcus viridans was the cause of

TABLE VI
LACRIMAL CONJUNCTIVITIS

Diplococcus pneumoniae	15
Staphylococcus	8
aureus	5
albus	2
aureus and albus.....	1
Streptococcus (alpha)	1
Proteus ammoniae	1
Mixed:	10
D. pneumoniae and Staph. aureus.....	2
D. pneumoniae; Staph. aureus; E. communior	1
D. pneumoniae; Staph. albus (n-h); Corynebacteria	1
D. pneumoniae; Strep. (alpha); Aerobacter aerogenes	1
Streptococcus (alpha); H. staph. albus	1
Streptococcus (alpha); Corynebacteria	1
Staph. aureus; Staph. albus (n-h).....	2
Staph. albus; Corynebacteria.....	1
Etiology Undetermined	10
Staphylococcus albus (n-h).....	4
Staph. albus (n-h) and Corynebacteria	3
Corynebacteria	1
No organisms	2
TOTAL	45

one case and probably contributed to three others. Proteus ammoniae was isolated in pure culture from one case.

Treatment: Cleansing of the lacrimal passages by expression and irrigation lessened the inflammatory reaction but rarely reestablished patency. In those cases in which the lacrimal passages were not opened by cleansing and probing, surgical interference was necessary. The type of operation was determined after x-ray examination of the lipiodol filled lacrimal sac; if the obstruction was low, dacryocystorhinostomy was done, if the obstruction was high, the sac was removed.

TRACHOMA

Thirty-nine new cases of trachoma were seen during 1937 (Table VII). There were 29 cases of active trachoma, and ten of healed trachoma in patients who came for treatment because of bacterial conjunctivitis. Sixteen of the active cases showed no bacterial infection, eight were secondarily infected with pneumococci, three with staphylococcus aureus, one with hemophilus influenzae and one with Morax-Axenfeld bacilli. Three of the ten cases of healed trachoma were infected with pneumococcus, five with hemolytic staphylococcus aureus and two with influenza bacilli.

TABLE VII
TRACHOMA

	I	IIa	IIb	III	IV	Total
No bacteria	3	4	1	8		16
D. pneumoniae			1	7	3	11
Staph. aureus			1	2	5	8
H. influenzae				1	2	3
H. lacunatus				1		1
TOTAL	3	4	3	19	10	39

Treatment: Cases with secondary bacterial infection were treated as if the offending agent were causing a catarrhal conjunctivitis. Trachoma was treated as previously described⁵ in this journal.*

OTHER SPECIAL TYPES

There were twenty-one cases of spring catarrh, several of which were of the limbic variety and several of the mixed variety, but the majority exhibited typical palpebral pathology (Table VIII). The palpebral conjunctiva appeared pale and milky because of thin pseudomembrane formations. There was cobblestone-like papillary hypertrophy and the patients complained of itching of the lids associated with a stringy or ropy discharge. Eosinophiles were demonstrated in scrapings from each case. Studies in allergy were

*Recently sulfanilamide has been used in the treatment of streptococic and pneumococic infections, trachoma and gonorrheal ophthalmia. Although it is apparently producing good results in many cases, the extent of its usefulness has not been determined. The maximum dosage for adults is two-thirds of a grain per pound of body weight per day, administered in three or four equal parts.

made, but as a rule were unsatisfactory in the determination of etiology. Three were secondarily infected, one with pneumococcus, one with staphylococcus aureus and one with influenza bacillus: all were treated for the bacterial infection. Symptomatic relief was obtained by the use of one per cent monohydrated sodium carbonate. There were two cases of phlyctenular keratoconjunctivitis in adults which were not secondarily infected. Both reacted to tuberculin intradermally and both responded well to tuberculin therapy. Two cases were classified as chemical conjunctivitis, neither of which was secondarily infected. One, an acute irritation, was due to accidental introduction of powdered emetine hydrochloride into the conjunctival sac, while the other was a chronic follicular conjunctivitis due to the prolonged use of eserine. Improvement was noted in the latter case when the drops were discontinued. Ocular pemphigus was observed in one instance; there was typical scarring of the conjunctival sac and associated vesicular scarring lesions of the mouth and pharynx. Eight cases were not classified, either because of incomplete studies or inadequate data.

TABLE VIII	
OTHER SPECIAL FORMS	
Vernal catarrh	21
Phlyctenular	2
Chemical	2
Pemphigus	1
Vaccinia	1
Not diagnosed or incomplete records.....	8
TOTAL	35

DISCUSSION

In this series of observations upon conjunctivitis the etiologic agent was sought by microscopic examination of smears and scrapings as well as by cultural methods. In all bacterial cases in which the etiologic agent was established, organisms were demonstrated by both methods. The inclusion bodies of inclusion blennorrhea were demonstrated in scrapings stained by the Giemsa method. In active cases of trachoma both the inclusion bodies formed by the trachoma virus and the secondarily invading bacteria were demonstrated in scrapings. Examination of smears and scrapings, which were quickly and easily prepared, was a valuable aid in the determination of the etiologic agent and therefore the determination of therapy. The age distribution in this series was not ideal, because there were relatively few patients from two weeks to sixteen years of age. However, the data probably are representative of conjunctivitis of the newborn and of conjunctivitis of the adult in Iowa.

Analysis of this study points out several interesting facts: first, the frequent occurrence of

toxin-producing hemolytic staphylococci as the only demonstrable etiologic agent in many cases; second, the rarity of diplobacillary conjunctivitis suggested by the occurrence of the Morax-Axenfeld bacillus (*H. lacunatus*) in only one case; and third, the absence of the Koch-Weeks bacillus in this locality, thus confirming the observations of previous authors.

CONCLUSIONS

1. The demonstration of the etiologic agent is important in the determination of the treatment of conjunctivitis.
2. The examination of smears and scrapings stained by the Gram and Giemsa methods was a valuable aid in the determination of the etiology of conjunctivitis.
3. Staphylococci were the most common cause of catarrhal conjunctivitis and conjunctivitis of the newborn.
4. Pneumococcus was the most frequent cause of lacrimal conjunctivitis and secondary infection in trachoma.
5. Pneumococcus was the second most common cause of catarrhal conjunctivitis.
6. The frequency of trachoma as shown by this survey suggests that more careful attention should be paid to the early diagnosis of this disease.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CARCINOMA OF THE THYROID GLAND

DONALD C. CONZETT, M.D., Dubuque

In smaller hospitals carcinoma of the thyroid gland is not commonly seen. The following case, therefore, seems to be of sufficient interest to report.

CASE REPORT

Mrs. L., a widow fifty-one years of age, was seen two weeks prior to her entrance to the hospital. At this time she complained of increasing nervousness with attacks of a fluttering sensation of the heart. These episodes had been of almost daily occurrence during the past three weeks and had made her very apprehensive. A goiter had

been present for many years, the patient dating its origin to the birth of her first child twenty-seven years previously. The gland had been gradually increasing in size, but during the past year the enlargement had been more rapid. The patient had had four children, all of whom were living and well. Her husband died six years ago from pneumonia. Her past history was essentially negative except for the ordinary childhood diseases. The menopause occurred two years before the present illness.

Examination revealed a middleaged, well-nourished woman, weighing 152 pounds. The skin was flushed, warm and moist. A moderate exophthalmus was present, but eye reactions were normal. The nose, ears and mouth were negative. A large irregular mass of thyroid gland was observed, consisting of a median mass, presumably the isthmus, about the size of an orange. This area was hard but smooth and regular in outline. Palpation produced difficulty in swallowing. A larger mass extended laterally to the right about an inch beyond the level of the lobe of the right ear. This mass, the right lobe, was softer and movable, and large veins could be seen traversing it. The chest was negative to palpation and auscultation. The heart was not enlarged; the rate was 104 but regular with no murmurs or accentuations. The abdomen was negative for masses or tender areas. There was no swelling of the extremities. The reflexes were uniformly exaggerated. A fine tremor was present in both hands. Muscle tone was diminished in arms and legs. The patient was hospitalized and placed on bed rest for two weeks. She was given five minims of Lugol's solution daily, supplemented with a high carbohydrate diet. At this time a basal metabolic estimation was taken with a plus 12 reading. Routine blood and urine analyses were entirely normal. The pulse dropped to 80, nervousness lessened, and the weight increased to 155½ pounds. For three days the patient's breakfast was purposely delayed until 9:00 a. m. On the day of election for operation the patient was, therefore, not suspicious and had had a good night's rest. Under ethylene anesthesia, a wide collar incision was made. The middle lobe or isthmus was about the size of a tennis ball. It was removed in toto baring the trachea. Its hardness was noted and in several portions it seemed almost of a cartilaginous character. In order to mobilize the right lobe, the sternocleidomastoid muscle was clamped and divided, and the cervical fascia likewise opened. This lobe was then removed. The hypertrophy extended laterally and cephalad, rather than in-

trathoracic. The fascia and muscle were repaired and inspection then revealed the left lobe to be of a normal size and consistency. The wound was closed with plain catgut and clips, and a small rubber wick was placed centrally. The specimen was sent to the laboratory and Dr. F. P. McNamara gave the following pathologic report:

Gross: "The specimen consists of two lobes of thyroid tissue. One is cystic and contains cloudy blood tinged fluid. The other is a solid lobulated mass (Fig. 1).

Microscopic: "The section of the wall of the first lobe shows moderate hyperplasia of the epithelium lining the follicles. The second consists of solid masses of round or polyhedral cells

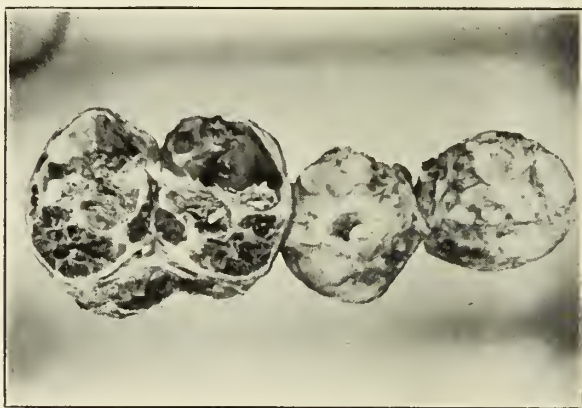


Fig. 1. Photograph of the thyroid gland. Note the cystic adenoma of the right lobe and the solid carcinoma of the isthmus.

with large vesicular nuclei. The latter show an occasional mitotic figure. Occasionally the cells can be seen infiltrating the connective tissue stroma.

Anatomic Diagnosis: "Cystadenoma of the thyroid gland with carcinomatous change."

The patient's postoperative course was uneventful, the drain was removed in twenty-four hours and the clips on the fourth and fifth day. The temperature and pulse had returned to normal on the fifth postoperative day. On the eighth postoperative day, x-ray therapy was begun under the direction of Dr. H. Edstrom. She received over the anterior thyroid gland, 800 roentgens measured in air with the following factors: 190 kilovolts; 5 milliamperes; 0.5 of a millimeter of copper and one millimeter of aluminum filtration at a distance of 60 centimeters. Over two posterior fields 1310 roentgens were given, using the same factors but at a distance of 50 centimeters. The entire treatment was given over an eleven day period.

COMMENT

Conclusions regarding the outcome in this type of case must of necessity be drawn from a large series of cases. Hare and Swinton of the Lahey Clinic¹ have recently reported on 314 cases of primary malignant disease in a series of 15,522 thyroidectomies. Their classification follows:

Group I:

A. Fetal adenoma with invasion of the blood vessels.

B. Papillary adenocystoma with invasion of the blood vessels.

Group II. Adenocarcinoma:

A. Papillary.

B. Alveolar.

Group III:

A. Small cell carcinoma.

B. Giant cell carcinoma.

C. Fibrosarcoma.

Our case would fit in the second type of Group I. According to these authors this group comprises 60 per cent of all thyroid cancers: the rate of growth is slow and recurrence is local rather than at distant points. They feel that surgery alone is unsatisfactory but that postoperative radiation offers a high percentage of cures. Radiation should be instituted early and its use has no deleterious effects on wound healing. The dosage is still undetermined but should be used up to the patient's tolerance, probably not to exceed 3,000 to 4,000 roentgens. If recurrence appears, further radiation is indicated. Hare and Swinton conclude that preoperative diagnosis is not possible, but that suspicious tumors should be excised, presented to a competent pathologist, and then upon receiving a positive diagnosis of malignancy, radiation should be used early and adequately.

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COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

American Board of Internal Medicine. Written examinations will be held February 20, 1939. Application must be received on or before January 1. Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

Southern Medical Association, November 15 to 18, Oklahoma City. Secretary, Mr. C. P. Loranz, Empire Building, Birmingham, Alabama.

Annual Meeting of the Radiological Society of North America, November 28 to December 2, Pittsburgh. Secretary, Dr. D. S. Childs, Medical Arts Building, Syracuse, New York.

Annual Meeting of the Western Surgical Association, December 2 and 3, Omaha. Secretary, Dr. A. H. Montgomery, 122 South Michigan Boulevard, Chicago, Illinois.

American Board of Obstetrics and Gynecology. Written examination and review of case histories for Group B candidates will be held in various cities of the United States and Canada on Saturday, February 4, 1939. Application for admission to this examination must be filed on an official application form in the office of the secretary at least sixty days prior to this date, or before December 4, 1938. Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

Annual Meeting of the Southern Surgical Association, December 6 to 8, West Sulphur Springs, West Virginia. Secretary, Dr. Alton Ochsner, 1430 Tulane Avenue, New Orleans, Louisiana.

Symposium on Mental Health held by the Section on Medical Sciences of the American Association for the Advancement of Science, Winter Meeting, December 27 to 31, Richmond, Virginia. Secretary, Paul O. Komora, 50 W. 50th St., Room 822, New York, N. Y.

American College of Physicians, March 27 to 31, 1939, New Orleans, Louisiana. Secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia, Pennsylvania.

Eighty-eighth Annual Session, Iowa State Medical Society, April 25 to 27, 1939, Des Moines, Iowa. Secretary, Dr. Robert L. Parker, Des Moines, Iowa.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

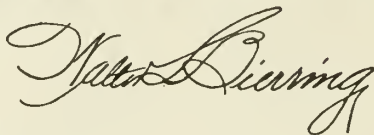
SCIENTIFIC EXHIBIT, AMERICAN MEDICAL ASSOCIATION

Application blanks are now available for space in the Scientific Exhibit at the Annual Session of the American Medical Association, to be held in St. Louis from May 15 to 19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

COLLEGE OF MEDICINE RECEIVES GIFT

The College of Medicine of the State University of Iowa announces a gift of \$22,500 from the John and Mary R. Markle Foundation, to be spent over a two-year period. Part of the fund, \$12,500, will provide for a continuation of the research on inflammatory conditions of the eye in the department of ophthalmology under the direction of Dr. Cecil S. O'Brien, and the remainder will be used to continue the research program on blood clotting and the bleeding tendency, under the supervision of Dr. H. P. Smith of the department of pathology.

STATE DEPARTMENT OF HEALTH



Tuberculosis Control in Iowa

C. K. McCARTHY, M.D.

Director

Division of Tuberculosis

In 1903, in Copenhagen, Denmark, Einar Holboell, a postal clerk, conceived the idea of obtaining revenue for some philanthropic purpose. In sorting hundreds of letters and packages containing messages of good will and happiness he believed that many people would be willing to purchase seals if the purpose for which they were used was laudable. "Children, that's it, children ill with tuberculosis."

In 1907 Miss Emily P. Bissell launched the first Christmas Seal Sale in the United States. Since that time the Christmas Seal, well known for its fine purpose, has been sold in forty countries of the world. The Christmas Seal is the symbol of the National Tuberculosis Association and has become an institution throughout the world. It carries a message that is understood in any language. This year's seal carries on each sheet, pictures of four pioneers in tuberculosis work: Einar Holboell, the originator of the Christmas Seal, and three great pioneers—Koch, Trudeau and Laennec.

In Iowa the Christmas Seal has made possible the present tuberculosis control program. Sponsored jointly by the Iowa Tuberculosis Association and the State Department of Health, this service is being instituted in the rural counties of Iowa. It is the hope of this department to establish this service in eighty such counties which are essentially rural.

Tuberculosis, a preventable disease, is spread from person to person by contact. Since we know this fact it should be possible to eradicate it in human beings as effectually as it has been done in cattle. This disease is dropping gradually from its place as the leading cause of death until now it stands seventh in the list. However, for the ages between fifteen and forty-five years it is still,

in the words of John Bunyan, "Captain of the men of death."

Constant vigilance on the part of the physicians is necessary to eradicate this deadly disease. The lowering of the infection rate is gratifying as shown by an increasing number of children, discovered by large surveys, to be free of tuberculosis. Modern methods of treatment are very helpful in lowering the mortality rate and increasing the number of people returned to a more or less normal mode of life.

Where progress is most needed, however, is in case-finding. The tuberculin-x-ray method has been found to be the method of choice. By means of the tuberculin test it is possible to screen out uninfected individuals and to find many cases before symptoms make their appearance. The Iowa Tuberculosis Control Program concentrates its efforts on those families where a death or a case of tuberculosis has been reported. Those persons who have been in contact with this case or death are advised by our nurse, specially trained in tuberculosis work and selected carefully for tactfulness, to visit their family physician. He performs the Mantoux test and, after interpretation of the test, obtains an x-ray of the chests of all positive reactors. The x-ray is taken either privately or at a special x-ray conference held usually in the county seat. The reports are sent confidentially to the family physician. The importance of the x-ray in diagnosis cannot be over-estimated. In children especially it far surpasses any other method. Adult type disease is sometimes impossible to discover by other methods.

The Tuberculosis Control Service, now in operation in Iowa, has been made possible only by the fine cooperation of the medical profession. The program is put into operation only after approval of the county medical society. It is gratifying to

state that fifty-six county medical societies have approved the plan to date. The Department of Health takes this opportunity to thank the physicians of the state for their help in establishing this service. The service is in operation simultaneously in about eight counties at the present. There are three special field nurses working for the Division of Tuberculosis and five county nurses working in counties where full-time public health service is available. For the past eight months an average of one survey a week has been completed.

The tuberculosis program has considerable educational value. It is teaching the value of periodic health examinations. The High School Radio Speaking Contest, which is now sponsored by seventy high schools of the state, is also helping educate the people to the dangers of tuberculosis and the value of periodic examinations. Thus more and more persons are being shown that adequate medical care is available now as it has always been in Iowa.

The physicians of Iowa are serving the people well and will continue to serve them well. It is only through the help of these men that we can make Iowa "A healthy state and a happier people."

ALUM PRECIPITATED TOXOID

Some of the reports on diphtheria immunization indicate that following active immunization with alum precipitated toxoid, 85 to 90 per cent of those treated (ages nine to twenty years) are found to be Schick negative. A certain percentage of reversions from Schick negative to positive will occur regardless of the type of preventive agent used.

McGinnes has reported negative Schick reactions in 94 per cent of the groups tested when Schick tests were performed after one treatment with alum precipitated toxoid. Ninety-five per cent were found to be Schick negative a year following immunization. No significant difference was found in the percentage immunized when alum precipitated toxoid was used or when the immunizing agent was unmodified, fluid toxoid.

Harrison, McGinnes and others believe that alum toxoid is the most effective agent yet devised. Frazier of Canada and others prefer unmodified fluid toxoid. Three treatments with fluid toxoid, but not two, are reported as being more effective than one treatment with alum precipitated toxoid. Several methods of active immunization against diphtheria have been suggested:

1. One injection of alum precipitated toxoid.
2. One injection of alum toxoid followed sev-

eral months later by a Schick test and, if indicated, by a second injection of alum toxoid or of unmodified toxoid.

3. One injection of alum toxoid followed four to six months later by a Schick test.

4. The method consisting of three injections of unmodified toxoid followed by a Schick test, has disadvantages.

ANNOUNCING LABORATORY COURSE FOR STUDY OF THE PNEUMOCOCCUS

Arrangements have been made for a laboratory course for study of the pneumococcus and of diagnostic procedure for type determination of pneumonia. This course will be given by M. E. Barnes, M.D., Director of the State Hygienic Laboratory, assisted by I. H. Borts, M.D., bacteriologist in charge, and other staff members. The dates are December 6 to 9, 1938. The course, which will be given in the Medical Laboratories Building at Iowa City, will afford an unusual opportunity for hospital and laboratory workers, technicians and physicians in all parts of the state, to become more thoroughly familiar with the Neufeld method.

Letters are frequently received at the State Department of Health from attending physicians who inquire as to facilities for diagnosis and availability of therapeutic pneumonia serum in their counties. These letters emphasize the importance of the typing centers which have already been established and of extending the facilities in order to serve physicians in adjoining counties whenever possible.

Limited funds are available through the United States Public Health Service with which to pay part of the expenses of laboratory technicians who register for the course. It is desirable to know at an early date, the number of registrants so that further arrangements may be made without delay.

Workers in hospital or other laboratories, and physicians desiring to register for this course, are requested to write to The State Department of Health, Des Moines, Iowa.

PREVALENCE OF DISEASE

	Sept. '38	Aug. '38	Sept. '37	Most Cases Reported From
Diphtheria	47	18	8	Black Hawk, Harrison
Scarlet Fever	89	62	133	Cerro Gordo, Polk, Woodbury
Typhoid Fever	19	35	20	Boone
Smallpox	11	10	8	Kossuth, Marshall
Measles	16	60	7	Woodbury, Boone
Whooping Cough	75	134	161	Washington, Dubuque
Epidemic Meningitis ..	3	5	2	Clarke, Decatur, Woodbury
Chickenpox	16	9	11	Boone, Buchanan
Mumps	24	45	27	Woodbury
Pollonayelitis	9	11	113	(For State)
Tuberculosis (pulmonary) ..	59	29	52	(For State)
Undulant Fever	7	25	11	(For State)
Gonorrhea	201	195	284	(For State)
Syphilis	237	235	446	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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SUBSCRIPTION \$3.00 PER YEAR

*Address all communications to the Editor of the Journal,
505 Bankers Trust Building, Des Moines*

OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII NOVEMBER, 1938 No. 11

THE VITAMINS

The maze of literature and the rapidly changing knowledge of the vitamins call for a brief analysis of the various accessory food factors and their proved place in human nutrition. The vast number of vitamin preparations and the numerous therapeutic claims of mixtures of the various components by certain manufacturers are confusing and often misleading. It seems necessary to point out again that vitamin preparations are not a panacea, and that a gelatin capsule containing an admixture of all the vitamins is not the elixir of life, nor is it going to prevent all the ills to which flesh is heir.

The proved physiologic effects of Vitamin A in the form of cod liver oil, halibut liver oil, percomorph oil or carotene are first, that a deficiency results in a characteristic eye disease, called xerophthalmia; second, that night blindness is one of the first symptoms of deficiency and for this condition Vitamin A is specific; third, that it is an aid in increasing the resistance to infections in general only when the ingestion of Vitamin A has been inadequate or the body reserve has been depleted; (there is no evidence that an excess intake of Vitamin A above the requirements for normal body functions, will prevent respiratory infections) and fourth, a deficiency results in retardation of growth, but has no more influence than the other food factors.

The literature and the changing nomenclature of the Vitamin B complex have been confusing. There have been described some ten different factors in the Vitamin B complex, but only two have been definitely shown to possess clinical applica-

tion. The first of these is Vitamin B₁, a deficiency of which results in the disease beriberi. This factor has been isolated and synthesized and is manufactured as "thiamin chloride." Anorexia of dietary origin may respond to treatment with this factor. Vitamin B₁ is essential for optimal growth in infants and children. It is possible that certain disturbances of intestinal motility and various types of neuritis may be due to a latent or sub-clinical beriberi. The second factor in the Vitamin B complex is the P-P factor, a nutritional factor effective in the prevention of human pellagra. Nicotinic acid, which is present in relatively large amounts in antipellagric foods, has been shown to prevent black tongue in dogs. Spies and his co-workers have demonstrated a specific effect of nicotinic acid in the treatment of pellagra, particularly influencing the lesions of the mucous membranes.

That scurvy results from an inadequate intake of Vitamin C has been conclusively demonstrated, both experimentally and clinically. It may be provided for in the diet by fruit juices, or by the administration of cevitamic acid. The therapeutic value of Vitamin C consists of the prevention and treatment of scurvy. However, evidence that such a state does exist depends upon diminished cevitamic excretion in the urine and demonstrable changes in the long bones. The rôle of cevitamic acid in the prevention and treatment of infections is still controversial and may be attributed to the disturbance of nutrition.

Vitamin D is one or more substances necessary for the proper utilization of calcium and phosphorus. It occurs naturally as cod liver oil and has been produced in crystalline form by the ultraviolet irradiation of ergosterol. Vitamin D is a specific in the prevention and treatment of infantile rickets, spasmophilia and osteomalacia. It is an important factor in tooth formation and in the maintenance of normal tooth structure.

In the clinical application of the vitamins we should be guided by specific indications and not go astray into experimental fields. Shotgun therapy with the vitamins is expensive and ill advised. No one product possesses any particular superiority over another; their value depends upon the reliability of the manufacturer and the potency of the product. We should be guided by the recommendations of the Council on Pharmacy of the American Medical Association as given in New and Non-Official Remedies, and not be influenced by enthusiastic commercial advertisements.

In subsequent issues of the JOURNAL, the various vitamins will be discussed individually in more detail.

USEFUL PROPHYLACTIC MEASURES IN THE COMMON CONTAGIOUS DISEASES

For some time it has been felt that it would be wise to compile and publish in the JOURNAL the available prophylactic procedures in the common contagious diseases and to evaluate their usefulness. The following represents the consensus of the Committee on Child Health and Protection of the Iowa State Medical Society:

Whooping Cough

I. Test for susceptibility—None

II. Active immunity

A. Sauer's Vaccine. One cubic centimeter is injected subcutaneously in the deltoid area of each arm, 1.5 cubic centimeters in the biceps area of each arm, and 1.5 to 2.0 cubic centimeters in the triceps area of each arm at weekly intervals. A total dosage of 8.0 cubic centimeters is administered to infants under two years of age, and 10.0 cubic centimeters to children over that age. It is preferably administered in the last half of the first year. Immunity is not acquired until four months have elapsed. Local and febrile reactions are common. Efficacy has not been definitely proved or disproved. According to Sauer it protects in a high percentage of cases, although others deny its value. Time will decide the question.

B. Krueger's Endo-antigen. One cubic centimeter is administered, then 1.5 cubic centimeters until six doses have been given. This is of no proved value.

III. Passive immunity

A. Exposure

1. Krueger's endo-antigen; 0.5 to 2.0 cubic centimeters daily for four to six doses. The efficacy of this treatment has not been established.
2. Convalescent serum; 20 to 50 cubic centimeters intramuscularly. This method of treatment has no proved value.

B. Treatment of the existing disease

1. Krueger's endo-antigen, as above, has no proved value but is recommended by some workers.
2. Convalescent serum has not proved efficacious, although it has not been employed sufficiently long for a final opinion.

Measles

I. Test for susceptibility—None

II. Active immunity—None

III. Passive immunity

A. Exposure

1. Prevention—the use of the same prophylactic measures as for modification but applied within the first four or five days after exposure. Recommended for delicate infants and children and for groups of children in institutions.

2. Modification (sero-attenuation)—the use of prophylactic measures on the sixth day after exposure, resulting in a mild attack of the disease, which usually confers permanent immunity. Recommended for all healthy children. The results are excellent. This may be done by:

- a. Convalescent serum, 5 to 10 cubic centimeters, depending on the age.
- b. Pooled adult serum, 10 to 20 cubic centimeters.
- c. Adult whole blood, 15 to 20 cubic centimeters.
- d. Placental extract, 2 to 4 cubic centimeters, which may produce severe local reactions.

B. Treatment of the existing disease

1. Convalescent serum, 50 to 100 cubic centimeters may be of value.
2. Placental extract in prodromal stage may modify attack.

Diphtheria

I. Test for susceptibility. The Schick test, which consists of the intradermal injection of 0.1 of a cubic centimeter of diphtheria toxin. The test should be read in forty-eight to seventy-two hours. An area of redness 0.5 of a centimeter in diameter denotes a positive test and indicates lack of immunity.

II. Active immunity, preferably done at nine months of age, and followed by a Schick test in three to six months. This may be accomplished by:

A. Toxin-antitoxin. Three one cubic centimeter doses at weekly intervals. For children over ten years of age.

B. Diphtheria toxoid. Two and preferably three one cubic centimeter doses at two to three week intervals.

C. Alum precipitated toxoid. Two doses at two to three week intervals of 0.5 to 1.0 cubic centimeter (depending on the concentration of the material).

D. Method of Park. One dose of alum precipitated toxoid followed in two weeks by one cubic centimeter of fluid toxoid.

III. Passive immunity

A. Exposure. The administration of 1,000 to 2,000 units of antitoxin in the exposed nonimmune. Should not be given except when patient cannot be observed regularly.

B. Treatment of existing disease. Antitoxin, 20,000 to 40,000 units, given intravenously depending on the severity and duration of the disease. In malignant type of disease, much larger doses are recommended.

Poliomyelitis

I. Test for susceptibility—None

II. Active immunity—No safe and effective method has been demonstrated

III. Passive immunity

A. Exposure. Controlled experiences with nasal instillations have not proved of value.

B. Treatment of existing disease. Convalescent serum employed as a therapeutic measure in doses of 100 cubic centimeters intravenously tends to lessen toxemia, but does not prevent paralysis or decrease the mortality.

Scarlet Fever

I. Test for susceptibility. The Dick test consists of the intradermal injection of 0.1 of a cubic centimeter of scarlet fever toxin. It should be read in twenty-four hours. An area of redness 0.5 of a cubic centimeter or larger constitutes a positive test and indicates susceptibility. Although the Dick test is not absolute it is in general a fairly reliable index of susceptibility.

II. Active immunity. A Dick positive individual may be rendered Dick negative by the administration of scarlet fever toxin in successive doses of 500, 800, 2,000, 8,000 and 80,000 units at weekly intervals. This procedure is not comparable in reliability to diphtheria immunization. It is the judgment of many clinicians that active immunization will prevent the rash, but not prevent the streptococcic throat infection and its sequelae.

III. Passive immunity

A. Exposure

1. The intramuscular injection of convalescent serum in doses of 10 cubic centimeters for children under ten

years of age, and 20 cubic centimeters for children over that age, confers temporary immunity. It should be given as soon as possible after exposure. Convalescent serum is obtainable from the Iowa State Board of Health for a small fee.

2. The prophylactic use of scarlet fever antitoxin is not recommended.

B. Treatment of existing disease

1. Convalescent serum, administered intramuscularly in mild cases, and intravenously in severe cases, in doses of 40 to 100 cubic centimeters, is an extremely valuable therapeutic measure.

2. Scarlet fever antitoxin may be administered in doses of 6,000 to 12,000 units. Severe serum reactions are common and militate against its use.

Smallpox

I. Test for susceptibility. An accelerated take on revaccination is considered a reaction of immunity.

II. Active immunity. The incidence of smallpox in Iowa is disgraceful and must be attributed to carelessness, for a method of prevention has been available since the latter part of the eighteenth century. The United States Public Health Service recommends that a drop of virus be placed on the skin and multiple acupunctures made in the skin through the virus. Blood should never be drawn in vaccinating. No dressing is necessary. Vaccination should be done before individuals are three years of age, and preferably at six months of age.

III. Passive immunity

A. Exposure—Vaccination

B. Treatment of existing disease—Nothing specific

Chickenpox

I. Test for susceptibility—None

II. Active immunity—No proved method

III. Passive immunity

A. Exposure. Convalescent serum in doses of 10 to 20 cubic centimeters may be given, but its value is questionable.

B. Treatment of existing disease—No specific treatment.

Mumps

I. Test for susceptibility—None

II. Active immunity—None

III. Passive immunity

A. Exposure. Five to 10 cubic centimeters

of convalescent serum may be used, but is of no proved value.

- B. Treatment of existing disease. Fifty to 100 cubic centimeters of convalescent serum may be given, but there is no evidence that it prevents complications.

AN APPROVED FORM OF SOCIALIZED MEDICINE IN IOWA*

The October JOURNAL of the Iowa State Medical Society carried an editorial explaining the increase in compensation for medical relief which was granted in September by the Iowa Emergency Relief Administration. This increase, and the new method by which the problem of medical relief is being handled, deserve very careful consideration by the medical profession. Under the new plan, relief is now administered in the counties under the Boards of Supervisors, and the medical work is under the control of the county medical societies. This is as it should be, and every member of the medical profession should cooperate to the fullest extent in making this new procedure a success. The increase in funds will make it possible to widen the scope of medical care, and yet insure compensation to those rendering the service. It is even possible that in the future, should this plan prove successful, the rate of compensation may be still further increased so that more rehabilitation work may be done.

The Medical Economics Committee has repeatedly stressed the importance of an active auditing committee of the county medical society to check the bills and services rendered. This will be even more important in the future than in the past. The medical profession must show that it can carry on a wide program of medical care on an economic and efficient basis if it is to stand on firm ground in demanding that it be given control of such a program.

The State Medical Society appreciates very much the splendid cooperation of the Iowa Emergency Relief Administration. It is particularly grateful to Norman S. Genung, Administrator, and Roy B. Martin, Executive Secretary, both of whom were instrumental in arranging this new plan and the increase in compensation. The Administration has tried to treat the medical profession fairly, and it now devolves upon each individual physician to support the Administration and its officers, and to make the county plan of medical relief one which will give the most adequate care to the sick.

GAS GANGRENE

Gas gangrene developing in wounds incurred in the agricultural state of Iowa comes with such explosive violence that it throws terror into both patient and doctor. The fact that gas gangrene is closely associated with barnyards, cultivated fields and pastures, automatically designates it as a disease to be studied clinically in the agricultural west. The unofficial summary of cases developing in one county of the state revealed the fact that every patient with true gas gangrene had been given the prophylactic dose of gas bacillus serum. Therefore, one fairly definite conclusion is that prophylactic serum does not prevent gas gangrene.

The present therapy for this condition includes amputation, serum, prontosil, sulfanilamide, wide open drainage, potassium permanganate and x-ray. A few years ago, the treatment consisted mainly of wide open drainage, permanganate and amputation—and yet some patients recovered during those years.

The Fracture Committee of the Iowa State Medical Society feels that since a high percentage of gangrene cases follow compound fractures, the study of gas gangrene could well come under the subject of compound fractures. Since the aggregate cases in any one individual's practice or in the practice of one community are so few in number, conclusive summaries of differing treatments cannot be established. It is, therefore, planned that a survey will be conducted in every county in the state, by the county fracture chairman and the county president and secretary, to obtain the case history of every authentic case in that county.

These histories should be complete, including the name and age of the patient, the type of injury, whether or not prophylactic serum was given and when given; the exact time gas developed; a positive bacterial finding of *B. welchii*; the time and exact type of treatment; and the final results, showing the mortality, duration of treatment, loss of limbs and the duration of the disease.

It is certain that the present course of treatment is not based on proved clinical data. With this in mind, some definite conclusive results could be obtained by a statewide study of this vicious disease showing the comparative results from the past and present treatments and from the varying forms of the present day therapy.

Within the next week or two the central office expects to mail forms to all doctors in each county, to be used in compiling the existing data on gas gangrene cases, and it is to be hoped that all who can contribute to the information on this subject, will be willing to spend the necessary time in filling in these forms.

*From the Medical Economics Committee.

Proposals of the National Health Conference Tabulated*

At the recent special meeting of the House of Delegates of the Iowa State Medical Society, the wish was expressed that the Medical Economics Committee might prepare a tabulation which would show briefly and explicitly the proposals of the National Health Conference, the recommendations of the American Medical Association, and the action of the Iowa State Medical Society. With that suggestion in mind, the Committee has prepared the following form which it hopes will give physicians in Iowa a better idea of the program, and the parts of it which are approved or disapproved by the medical profession.

NATIONAL HEALTH CONFERENCE

Recommendation I. Expansion of Public Health and Maternal and Child Health Services. The Committee recommends the expansion of existing cooperative programs under Title VI (Public Health Services) and Title V (Maternal and Child Health Services) of the Social Security Act. This includes a strengthening and expansion of organized public health services in the states and in local communities; and provision of medical and nursing care of mothers and their newborn infants, medical care of children, services for crippled children, consultation services of specialists, and extension of postgraduate training of physicians.

Recommendation II. Expansion of Hospital Facilities. The Committee recommends a ten year program providing for the expansion of the nation's hospital facilities by the provision of 360,000 beds—in general, tuberculosis, and mental hospitals, in rural and urban areas—and by the construction of 500 health and diagnostic centers in areas inaccessible to hospitals, along with financial assistance to carry on during the first three years of operation.

Recommendation III. Medical Care for the Medically Needy.

The Committee is impressed with the evidence now available that one-third of the population which is in the lower income levels is receiving inadequate general medical serv-

AMERICAN MEDICAL ASSOCIATION RECOMMENDATIONS

Recommendation I. Your Committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's Cabinet. It *approves the general principles* outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health Services, and pledges cooperation in developing efficient and economical ways and means of putting into effect this recommendation. It believes that *expenditures should not be made for the treatment of disease* except so far as this cannot be successfully accomplished through the private practitioner.

Recommendation II. Your Committee *favours the expansion of general hospital facilities where need exists*. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals. Your Committee heartily *recommends the approval of the recommendation of the Technical Committee stressing the use of existing hospital facilities*. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

Recommendation III. Your Committee *advocates recognition of the principles that the complete medical care of the indigent is a responsibility of the community, medical and allied professions and that such care should be organized by local*

ACTION OF IOWA STATE MEDICAL SOCIETY

Recommendation I. Your Committee recommends that the House of Delegates of the Iowa State Medical Society *concur* in the action taken by the House of Delegates of the American Medical Association, and *approve* the recommendation adopted by that body in regard to Recommendation I of the National Health Conference.

Recommendation II. Your Committee *recommends approval* of the action taken at the recent special meeting of the House of Delegates of the American Medical Association. Your Committee recommends that special attention be paid to the need in this state for an expansion of the existing hospital facilities for the care of mental cases. Your Committee feels that there is often a misconception in the minds of the public as to the actual economic problems of hospital administration and recommends that a policy of education to clarify the situation be carried on by properly designed publicity.

Recommendation III. Your Committee *recommends the approval* of the recommendation of the House of Delegates of the American Medical Association, with the following additions: (1) that the present so-called Iowa plan, as it varies in the

*From the Medical Economics Committee.

ices. This applies to persons without income and supported by general relief and to those being supported through old-age assistance, aid for dependent children, or work relief, and also to families with small incomes. These people are doubly handicapped. They have higher rates of sickness and disablement than prevail among groups with larger incomes, and they have lesser capacities to buy and pay for the services they need. Current provisions to assist these people, though generously given in many state and local governments, by voluntary organizations, and by professional practitioners, are not equal to meet the need.

The Committee recommends that the Federal Government, through grants-in-aid to the states, implement the provision of public medical care to two broad groups of the population: (1) to those for whom local, state or federal governments, jointly or singly, have already accepted some responsibility through the public assistance provisions of the Social Security Act, through the work relief programs, or through provision of general relief; (2) to those who, though able to obtain food, shelter and clothing from their own resources, are unable to procure necessary medical care. It is estimated that, on the average, \$10 per person annually would be required to meet the minimum needs of these two groups for essential medical services, hospitalization, and emergency dentistry. This part of the program might be begun with the expenditure of \$50,000,000 the first year and gradually expanded until it reaches the estimated level of \$400,000,000 which would be needed to provide minimum care of the medically needy groups. The Committee recommends that one-half of the total annual costs be met by the federal government.

Recommendation IV. A General Program of Medical Care. The Committee recommends consideration of a comprehensive program

government units and supported by tax funds. Since the indigent now constitute a large group in the population, your Committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies. Your Committee wishes to see continued and improved the methods and practices which have brought about the reduction of morbidity and mortality among all classes of people.

Your Committee wishes to see established well coordinated programs in the various states of the nation, for improvement of food, housing, and the other environmental conditions which have the greatest influence on the health of our citizens. Your Committee wishes also to see established a definite and far reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country. In the face of the vanishing support of philanthropy, the *medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy*, provided, first, that the public welfare administrative procedures are simplified and coordinated; and, second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your Committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "The rôle of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

Recommendation IV. Your Committee *approves the principle of hospital service insurance* which is being widely adopted throughout

different counties, be continued and adjusted to fit the changing conditions in local counties: (2) that the old age group be considered as statutory poor for medical and surgical relief in each county; (3) that medical and surgical relief for the marginal group be determined by local authorities cooperating with the county medical societies, and when so determined the county society shall carry it under its regular contract for the care of the indigent.

Recommendation IV. Your Committee *recommends the adoption* of the recommendation of the House of Delegates of the American Med-

designed to increase and improve medical services for the entire population. Such a program would be directed toward closing the gaps in a health program of national scope left in the provisions of Recommendations I and III. To finance the program, two sources of funds could be drawn upon: (1) general taxation or special tax assessments, and (2) specific insurance contributions from the potential beneficiaries of an insurance system. The Committee recommends consideration of both methods, recognizing that they may be used separately or in combination. Such a program should preserve a high degree of flexibility, in order to allow for individual initiative, and for geographical variations in economic conditions, medical facilities, and governmental organization. It should provide continuing and increased incentives to the development and maintenance of high standards of professional preparation and professional service; it should apportion costs and remove the economic barriers which now militate against the receipt of adequate medical care. The rôle of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice.

Recommendation V. Insurance against Loss of Wages during Sickness. The Committee recognizes the importance of assuring wage earners continuity of income through periods of disability. A disability compensation program is not necessarily part of a medical care program; but the cost of compensating for disability would be needlessly high if wage earners generally did not receive the medical care necessary to return them to work as soon as possible. Temporary disability insurance can perhaps be established along lines analogous to unemployment compensation; permanent disability (invalidity) insurance may be developed through the system of old-age insurance.

the country. Such insurance should be confined to provision of hospital facilities and should not include any type of medical care.

Your Committee encourages county or district medical societies, with the approval of the state medical society of which it is a component part, to develop appropriate means to meet their local requirements of health needs.

In addition to insurance for hospitalization, your Committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness.

Your Committee is not willing to foster any system of compulsory health insurance.

Your Committee recommends the expansion of legislation similar to workmen's compensation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your Committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

Recommendation V. Your Committee *unreservedly endorses the principle of compensation for loss of wages during sickness.* It believes, however, that in the interest of good medical care the attending physician should be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

ical Association, and in addition recommends that in the development of plans by county or district medical societies to meet the local medical needs, the full cooperation of all local health agencies be sought. We further recommend that the Iowa State Medical Society shall consider all feasible methods to educate the general public as to the value of indemnity insurance.

Recommendation V. Your Committee *recommends the approval of the action of the House of Delegates of the American Medical Association in unreservedly endorsing the principle of compensation for loss of wages during sickness.* Your Committee, however, feels that there should be a committee of appeal from any controversial decision of the medical employee of the disbursing agency. This committee of appeal should be composed of three local physicians in good standing in the local county medical society.

The Red Cross and the Medical Profession

The Red Cross views the relationship between itself and the medical profession as one of mutual helpfulness. It is by means of cooperation between the two that the greatest good is achieved. This relationship was well emphasized last June when delegates to the Eighty-ninth Annual Session of the American Medical Association voted complete approval of Red Cross medical policies in disaster operation. The delegates further called for active cooperation of local organizations of doctors and dentists with Red Cross chapters in drawing up advance plans covering the medical phases of relief. The Red Cross does not substitute its medical service for the services of local doctors. Primary responsibility for care of the sick and injured in disasters rests upon the shoulders of local physicians. The Red Cross cooperates with these local physicians, assists in organizing and directing medical relief work, and provides facilities needed for the emergency.



A report from Miss Margaret Dizney, National Red Cross nursing representative in charge of coordinating Red Cross health work throughout New England following the September hurricane, stresses the cooperation received from local medical men and state and local public health departments. Fracture cases, she reported, had been most numerous and in many cases it will be necessary for the Red Cross to arrange for plastic surgery for victims who sustained severe face lacerations and broken face bones. A total of 150 Red Cross nurses were on duty as volunteers during the emergency period following the storm, while an additional five hundred Red Cross nurses employed by public and private agencies devoted all their time to the disaster victims during the hectic days that followed disaster. The medical problem following the New England hurricane and floods was, fortunately, not as great as it might have been. Fracture cases were mostly caused by the hurricane. The floods generally did not reach the expected stage. By reason of prompt health supervision, immunization where needed, and other measures, illness was kept to a minimum.

Not so, however, during the Ohio-Mississippi Valley flood of 1937. That disaster occurred when winter was at its height. Even before the waters began to rise, cases of illness were prevalent and hospitals were crowded. The Red Cross medical service was called upon for almost superhuman efforts. Up and

down the stretches of the Mississippi and Ohio Valleys, the Red Cross established field hospitals to the total of 315. As a precaution against outbreaks of epidemic and disease, 790,096 persons were immunized. So thorough were the medical phases of Red Cross relief that only one epidemic broke out, and in this case the disease, cerebrospinal meningitis, had been prevalent in the area prior to the flood. This was at Jonesboro, in northeastern Arkansas.

The first case was discovered February 5 in one of the large tents which housed about forty people. The patient was taken to the local hospital, but died within forty-eight hours. All fami-

lies in that tent and all known contacts were moved into separate tents, well isolated from the rest of the camp. Two new cases were reported on February 7, and from then on other cases appeared every two or three days. Patients were cared for in a tent hospital hurriedly organized to cope with the emergency. However, there was urgent need for better quarters. Accordingly, after a council of Red Cross health officials and local physicians, on February 21 it was decided to construct a wooden barracks as an isolation hospital. The work was started with WPA labor, and the building completed, equipped and ready for occupancy the following day. This emergency hospital proved to be very effective. The results indicate how effective it was. The first case was reported on February 5 and the last on March 24. The hospital was closed April 3.

The control program was a joint project in which local physicians, state and local health departments and the Red Cross coordinated their work. It is an example of good team work and an effective control program.

Beginning on Armistice Day and continuing through Thanksgiving, Red Cross chapters throughout the United States will conduct their annual Roll Call for members for the coming year. The dues which these members pay make it possible for the chapters and the national organization to carry on their programs of community and nationwide service. Only in times of severe distress are special fund appeals made. Readers of *The Journal of the Iowa State Medical Society* are invited to join their local Red Cross chapters and thus contribute to the maintenance of the effectiveness and efficiency of Red Cross work.

First Annual Program Iowa Interprofessional Association

Waterloo, Wednesday Afternoon, October 12, 1938

The meeting of the Iowa Interprofessional Association, held in connection with the Thirty-fifth Annual Convention of the Iowa State Association of Registered Nurses, at the Masonic Temple, Waterloo, Iowa, October 11-13, 1938, convened at 2:20 o'clock. Mrs. Nellie C. Holmes, President of the Iowa State Association of Registered Nurses, presided and introduced Dr. R. D. Bernard, of Clarion, president of the Iowa Interprofessional Association.

President Bernard: I deem it a distinct privilege to preside at this, the First Annual Program of the Iowa Interprofessional Association. This meeting has been made possible through the courtesy of the Iowa State Association of Registered Nurses. For this courtesy, I extend the sincere thanks of the officers and members of our organization. I wish, also, to thank Dr. Fred Moore and Miss Alma Hartz for their untiring efforts in arranging this program, and also Mrs. Haven for the excellent local arrangements.

The Iowa Interprofessional Association was officially organized September 13, 1936. Its membership comprises all members in good standing in the Iowa State Association of Registered Nurses, the Iowa Pharmaceutical Association, the Iowa State Dental Association, the Iowa Veterinary Medical Association, and the Iowa State Medical Society, in round numbers approximately 6,000. For two years previous to the organization date, committees representing these five groups had given the interprofessional idea careful and exhaustive study. The organizations then in existence were thoroughly scrutinized, many were visited, and the type of organization in each was studied to determine its fitness for use in Iowa. It was finally decided to unite these groups loosely. Policies of the member groups were in no instance to be determined; the units must, at all costs, retain their identity and individuality; their trend of thought was to remain along channels that were broad, free from the dangers of radical obstructions, and protected from floods of adverse and unwise ideas. This idea and type of organization met with the approval of the house of delegates of the five groups. The broad purpose of this organization is education in the field of health. It also provides a clearing house for the interchange of information respecting the plans and methods of organization developed by the various members. It acts as a clearing house of research on various civic problems in the solution of which the technical knowledge of professional people is of value. It proposes to educate the public with respect to the aims of the member professions and the value of high grade professional service, and cooperates in securing and maintaining legal and ethical standards of character and education requisite to the rendering

of high grade professional service. It is our firm conviction that this organization holds a commanding position in the state in the field of health education; that the local groups have been and are accomplishing much for the betterment of living conditions, educating the laity along the fields of immunization, standardization of local milk supplies, and organization of local health units. Above all, it has unified these five groups which have so much in common, who are such a vital factor in the health of the people of Iowa.

We feel that the program to be presented this afternoon, while of special interest to the members of this group, is of particular interest to the general public. The proposed national health program should interest every citizen of this country, for eventually every citizen will be affected. It is a complex problem, little understood at the present time. A program of this magnitude involving 130 million people; a revolutionary change in the professions of dentistry, nursing, pharmacy, and medicine, not to mention the hundreds of millions of dollars necessary for its successful completion, must naturally develop warm proponents and equally warm opponents. It is our desire to present both opinions this afternoon. We hope and expect that you will become thoroughly enlightened on the most significant government recommendation in the field of health in the history of this nation. The gentlemen on the program this afternoon have graciously consented to answer questions following their addresses. You will be given an opportunity, following the program, to ask any questions you may desire. It is my privilege to introduce the first speaker, Professor H. V. Gaskill, Dean of Industrial Science of Iowa State College, at Ames, who will speak upon "Mutual Interests of the Professions in the Basic Sciences."

Dr. H. V. Gaskill: Mr. President, Ladies and Gentlemen: The part I play in this program is not so specific as the parts the gentlemen who follow me will play.

The theory of organization and service by an interprofessional society is certainly fundamental and far-reaching in its effects on our social system. It is a thing upon which I should like deeply and sincerely to compliment all of the members of this group. It is distinctly an advance, I feel, in our social outlook, our social theories, and it is a thing for which the members of these professions in the state of Iowa should be complimented most seriously. If we accept this philosophy of banding together to increase effectiveness of our service, as this Iowa Interprofessional Association has done, and of banding together for the offering of service rather than as a pressure group for propaganda, as some of the groups in the history of the world have done, we

are in this sense offering services to the public rather than forcing services upon the public.

I want to discuss with you as applied scientists, scientists engaged in the application of the basic sciences, some of the philosophical implications from the basic sciences—which I represent—which affect your work, and the effectiveness of your work with the public.

I will mention four of these fundamental social theories, in which I think you will become interested, as underlying the work of the Interprofessional Association and eventually the delivery of professional services to the public. Both the general public and the student of science have been unnecessarily frightened regarding the great complexities of the sciences, especially some of those applications which we deliver to the general public. This is our fault; we have over-sold the point that tremendous concentration is needed in a narrow field of science. May I quote from the Handbook of our Science Division at Iowa State College to show the attempt we make to influence the freshman to keep in a broad field rather than a narrow specialty, early in his educational career?

"It is becoming increasingly important for a student of the sciences to make his educational plans in terms of broad scientific fields. Because far-reaching economic and social changes are taking place in the world of today, adequate scientific education must serve as a preparation for the world of tomorrow, as well as for adjustment to the world of today.

"To meet these needs, the courses for the first two years are designed to lay a broad foundation. The scientist must develop the power to deal creatively with new problems. It is impossible to foresee all of the special techniques or all of the specialized knowledge which the student will need in his professional career. But an education which emphasizes the fundamental principles of science will enable the student to meet specialized problems more intelligently.

"During the junior and senior years, the student's field of specialization is developed. The student, together with his counselor and the dean, plans a program of studies within a field of science. Quite naturally, the student is better qualified to select a field or fields of science after two years of college work. With broad fundamental courses as a basis for his selection of a major field, the last two years of concentration follow the first two years of general preparation as a normal and logical sequence. Many students, however, have chosen a field of science before entering college."

It is true that the specialist spends years in his specialty, but that need not frighten the youngster. Viewed in retrospect, it is not so bad. Viewed from the "beginning end," it looks futile. I think that is more a problem for those of us in the applied sciences than it is for you representing the applications, but it is nevertheless an extremely important factor. It is a thing to which your group can contribute.

The second basic philosophic ground work is that we need freedom from dogma. We must not be

influenced by any special economic theory or any political system in the delivery of professional services to the public. I said at the outset that I wanted to keep my remarks free from sentiment or propaganda. I shall backslide to this extent now, to give propaganda for an idea, an idea that contributes to the effectiveness of the delivery of services by the members of the several professions. We must have science for the citizens. The benefits of science are for the citizens, for the many, and not for the privileged few, not for an aristocracy of any kind, political, financial, intellectual or social. A more general comprehension and appreciation of science among the citizenry is essential for bringing about a more widespread enjoyment of the fruits of science, including new developments as they occur. This is also one of the surest methods of blocking quackery, the development of quackery, and the acceptance of quackery on the part of the citizenry. The widespread dissemination of accurate and sound information, then you see, is more far-reaching.

Another aspect of this idea of freedom from dogma is a psychologic point regarding the way in which science is to be given to the citizen. This is the need for directness and simplicity. There need be no obvious effort to be entertaining, shocking, elegant, or jazzy. Faraday and Huxley wrote directly of the worthwhile things with the intention of instructing their readers. We shall do well to follow that example of directness and simplicity, whether we are discussing basic science or professional services. The citizen will read or listen to science just as he reads the directions for hooking up his new radio, or any other explanation of something he feels worthwhile. Clearness, exactitude, and relation to genuine interests characterize writing or speaking which is to be effective, and these virtues, if adhered to strictly and unaffectedly, will make the explanations fascinating to the citizens. Obscurities must not only be rare, they must be totally absent. Obscurity and lack of directness can have no place in the explanation of professional services for the public, or in measures for the public health or hygiene; nor can they appear in the scientific explanations for those citizens who happen to be obtaining a scientific education in a college. On this point, I hope you will permit another illustration from the field of scientific education which I represent. In the decade and a half from 1920 to 1935, we had many critics and many educational reformers. Unfortunately, we still have some of those. Let me quote something which Hogben has said about one type:

"A disturbing omen of cultural decadence is an attitude common among those regarded as educational reformers. To acquire a reputation in this capacity you need only replace the formula, knowledge is an end in itself, by the dogma, childhood is an end in itself. This means that we are to stop thinking about what kind of knowledge an age of potential plenty requires from its citizens and leave the child to decide what it likes best, a policy which conveniently promotes both teacher and pupil to the leisured class. Naturally it is important that some

people should study how to make children happy if their happiness is compatible with their happiness in later life, if it is recognized that the mean expectation of life in modern America is sixty-two years; and if it is also clear that happiness is the concern of psychologic medicine and not the primary business of education. The trouble is that so many of our educational reformers do not realize that pediatrics is one thing and pedagogy is another. Shirking our own responsibility for thinking out a rational curriculum by placing it on the shoulders of the child, has two consequences. One is that it discharges us from the inconvenient duty of discovering why so much useful and necessary knowledge is dull or how useful and necessary knowledge can be made more palatable and intelligible. The other is that it heavily penalizes the many whose parents cannot give them guidance they ought to receive from the general policy of education."

However, in making this knowledge palatable and intelligible, we need not resort to pure entertainment and sacrifice specificity. Quoting Hogben again:

"Another sinister feature shows itself when we compare popular scientific articles and broadcast talks with such lectures as those which Faraday, Huxley, Ball and Tyndall delivered to audiences of working men. Huxley wanted to impart knowledge. He was content to take simple, well-tried truths of science and to explain them in clear and simple language. The prevailing fashion is to parade the most speculative, socially insignificant and least digested hypotheses at the theoretic periphery of specialized research before mystified audiences who duly register their bewildered reverence for the great masters."

I wish I could make some specific comments about some radio programs which I know many of you have heard. There is a difference between direct simplicity and obvious efforts at entertainment. Too often another undesirable concomitant of entertainment is obscure explanation, and that has no place in science. An evidence of this is one rather popular explanation of the phenomenon of birth, for children, in terms of a lily-of-the-valley, birds-and-bees allegory. This type of information has no place in scientific education.

"In the curriculum of the school this emphatically does not mean letting children follow their 'own' inclinations, stimulating a diffuse and socially uncoordinated curiosity, sacrificing every other consideration to preparation for a means of livelihood, or indoctrinating them with any finalistic philosophy. In general terms, it means seeing that as far as possible every citizen has some basis for rational judgment about the things which most closely affect his or her social welfare. The language of natural science is very largely the language of mathematics, and since our rational business is to make the world outlook of science an open bible, it is also our rational business to democratize the art of calculation as the reformation democratized the art of reading. This means that instead of leaving it out of the curriculum because it is unattractive, we have to make it attrac-

tive to the average individual by bringing it into relation with social experience."

Thus, you see this matter of freedom from dogma can have tremendous effects. Now for the third of these basic underlying principles. Scientific discovery and progress in the past have depended primarily upon social needs and circumstances rather than the individual efforts of "great men," although these must not be entirely disregarded. Theoretic science continually renews its youth by the infusion of new problems derived from the common experience of mankind and from contemporary social needs. That is so true in the kind of professional services which members of this interprofessional group render to the public. The advance of science liberates mankind from beliefs which sidetrack intelligently directed social effort. The delivery of professional services is again influenced by the knowledge which the people have, or which the people do not have, and that seems to me to be of tremendous importance. Slavery inhibited the invention of labor-saving machinery; chemistry advanced rapidly when industries demanded chemical knowledge; navigation stimulated astronomy and mathematics from early times. Conversely, witchcraft and superstition delayed the advances of human medicine for perhaps two centuries. If rationally used and socially directed science could be the means of redesigning social life in accordance with fundamental and universal human needs, as, for example, the need to bear children, what science can do for human freedom and happiness when its powers are controlled by the responsible agents of a genuinely benevolent humanism, motivated entirely by a high type of social consciousness is, you see, beyond limit. There is no limit to what the professions directing the destinies of human welfare may do.

Now in regard to the fourth, and last philosophic point, I want to say just a word about the "practical idealism" of cooperation, and especially cooperation in efforts as is embodied in an interprofessional society. I fear some of the modern interpretations of cooperation miss the true idealism which should be included. Remember, I call it a "practical idealism." Even though it is idealistic, I think it works. A human being, we must remember this when we are delivering professional services, is born into the world a completely uncooperative individual. That is not part of his original nature. Cooperation is something he must learn. Cooperation is dependent upon the amount of social experience the individual has had. If we take an individual who has led a life by himself on a desert island, and bring him into any kind of a social group, he will not cooperate because he has not learned it, and he has had no social experience as a background on which to base that cooperation.

The person who seeks to unite with other living minds is showing the practical idealistic type of cooperation to which I have referred. An astronomer studying the movements of a planet seeks to understand and comprehend the planet; but what he discovers makes no impression upon the planet. The

scholar reads complex theories of philosophy, he struggles, sweats mental blood, and blesses or curses the departed philosopher; but no impression is made upon the philosopher. In these two types of activity the initiative and the planning come from one side. It is different with the individual who seeks to cooperate with other individuals. The "other" is a living person who does not simply take orders. This "other" consciously reacts, as a layman, a patient, or as a fellow scientist. His reaction may, in fact often does, require the first person to modify his point of view, and this modification continues back and forth causing each to modify. That is the true kind of scientific cooperation. It is thus that the processes of a kind of progressive creation of new ideas or points of view develop. This is the ultimate goal of intelligent cooperation.

The great individuals of the world have been great because, in one way or another, they have pushed beyond the ordinary limits of the self. This expansion of the self in terms of union with others is illustrated over and over again in the lives of the world's great. Quoting from Link: "One of the most common symptoms of an inferiority complex or of personal failure is the desire to change the social order, usually in one's immediate environment, often in the world at large. The youngsters, suffering from personal failure, often want to change their families, not themselves. The student who fails in his studies wants to change his teachers or the marking system, not himself. The employee who fails to get the desired salary wants to improve his employer, not himself. The worker, unable to get or hold a position, wants to change the system generally."

As all of you have heard, many people would like to change the whole system of the delivery of professional services. Any individual who is suffering from this kind of difficulty has never understood, in terms of this practical idealism to which I have referred, the interchange which real cooperation implies. Truly it is then, for the practical idealism of cooperation, that we can repeat the philosophy which I think always will be good: "But seek ye first the kingdom of God * * * and all these things shall be added unto you."

President Bernard: We are privileged this afternoon to have Dr. C. E. Waller, Assistant Surgeon-General of the United States Public Health Service, and member of the Technical Committee on Medical Care, from Washington, D. C., who will speak upon the subject, "A National Health Program—A Review of the Program Recommended by President Roosevelt's Interdepartmental Committee to Coordinate Health and Welfare Activities."

Dr. C. E. Waller: The significance of the National Health Conference held last July under the auspices of the President's Interdepartmental Committee to Coordinate Health and Welfare Activities of the Federal Government may be better appreciated by a brief consideration of events which led to the gathering of two hundred delegates who represented the major forces concerned with the nation's health and wel-

fare. Following the passage of the Social Security Act, the President, in August, 1935, created the Interdepartmental Committee as a working unit to smooth the way for prompt and effective application of the Act's provisions. Four assistant secretaries of government departments—the Treasury, Interior, Agriculture and Labor—and the chairman of the Social Security Board were designated members of the committee. In its function as a coordinating agency for the various programs of federal aid to the states, the committee immediately appointed technical subcommittees whose common objective was to effect coordinating agreements among federal agencies cooperating with the states. In this way, working agreements were promptly reached by the United States Public Health Service and the Children's Bureau on public health nursing; by the Division of Labor Standards and the Public Health Service on industrial hygiene, and similar agreements with respect to the program for aid to crippled children and aid to the blind have also been reached. Under the instructions of the Executive Order "to study and make recommendations concerning specific aspects of the health and welfare activities of the government," the Interdepartmental Committee set up additional technical units on recreation, nutrition, crime prevention and parole, and medical care.

The work of the last named group, the Technical Committee on Medical Care, provided the impetus for the summoning of the National Health Conference. This committee was appointed nearly two years ago, with Dr. Martha E. Eliot of the United States Children's Bureau as chairman, and representative of the Social Security Board and the Public Health Service composing the membership. As their studies progressed, two things became increasingly clear to the committee: first, that existing services for the conservation of national health are inadequate to secure to the citizens of the United States such health of body and mind as they should have; and second, that nothing less than a national, comprehensive health program can lay the basis for action adequate to the nation's needs. These conclusions were developed in a report submitted to the Interdepartmental Committee and laid before the President by Miss Josephine Roche, chairman of the committee, on February 14, 1938. The first part of the report, the Need for a National Health Program, was made public in March and, at the suggestion of President Roosevelt, a conference was called in July to consider the second half of the report, Proposals for a National Health Program. The President's message to the Interdepartmental Committee, with the reading of which the National Health Conference was opened, significantly reflects the objectives of the conference. He wrote in part:

"I hope that your technical committee's report on the need for a national health program and its tentative proposals will be read and studied not only by the participants in the conference but by every citizen. Nothing is more important to a nation than the health of its people. Medical science has made re-

markable strides, and in cooperation with government and voluntary agencies it has made substantial progress in the control of various diseases. During the last few years, we have taken several additional steps forward through the extension of public health and maternal and child welfare services under the Social Security Act, the launching of a special campaign to control syphilis, the establishment of the National Cancer Institute, and the use of federal emergency funds for the expansion of hospital and sanitation facilities, the control of malaria and many related purposes.

"But when we see what we know how to do yet have not done, it is clear that there is need for a coordinated national program of action. Such a program necessarily must take account of the fact that millions of citizens lack the individual means to pay for adequate medical care. The economic loss due to sickness is a very serious matter not only for many families with and without income, but for the nation as a whole.

"We cannot do all at once everything that we should do. But we can advance more surely if we have before us a comprehensive, long-range program providing for the most efficient cooperation of federal, state and local governments, voluntary agencies, professional groups, mediums of public information and individual citizens. I hope that at the National Health Conference a chart for continuing concerted action will begin to take form."

Another factor which bore a definite relationship to the work of the Technical Committee on Medical Care was the National Health Survey of the Public Health Service. Preliminary analyses of the data collected during 1935 and 1936 by the survey placed before the Technical Committee the means of measuring health needs quantitatively, and of determining the degree of correlation among all the factors involved. These data, together with those provided by other agencies, provided an index as to the prevalence of disabling illness not only for the population as a whole, but according to such important categories as age, sex, occupation, family income, living standards and size of community. It made it possible for the committee to weigh these factors in relation to mortality figures, as well as to medical and nursing care received and to the availability of hospital facilities. The Technical Committee made a special study of the nation's existing facilities for general hospital care, and for hospitalization of tuberculous and mental patients, in relation to their distribution, type, and to standards generally agreed upon by hospital, medical, and public health authorities. With such a background of cooperative study, the Technical Committee prepared the report which was to become the basis of the deliberations of the National Health Conference.

To many interested observers, one of the most significant aspects of the conference was the extraordinarily representative character of its membership. Among this relatively small group of two hundred persons were found individuals, who by reason of their professions, their achievements, and

their profound interest in the welfare of the nation, represented every important sector of our national life. Not alone were the medical, dental, and public health professions and allied specialties represented, but there were also present representatives of business, labor, agriculture and public welfare, civic organizations and voluntary associations. Economists, educators, lawyers, engineers, and editors of scientific, social, and popular publications made up another important segment of the membership. In addition, some four hundred interested observers from the professions and from lay groups attended the sessions, although participation in the proceedings was limited to the two hundred invited delegates. In his summary of the conference during the closing session, Professor C. E. A. Winslow of Yale University so ably expressed the importance of this wide representation, that I wish to give you his words. He said, in connection with the national health program: "... never before has it been discussed face to face with those great agencies that really represent the American people, and when this health program has received, as it has received in general principle and in broad method, the support of both the great labor organizations of the country, of the agriculture of the country, of the business of the country . . . and when we have the support of the women of the country and the youth of the country, and the press, that is a fact of the most profound and momentous significance."

It is true that cooperative discussion and action with both professional and lay organizations of the country is nothing new to a public servant. In that very phrase, public servant, lies the essence of the federal function of responsibility and activity for the protection of national health. The public health program of today owes its advance to just such mutual endeavor on the part of federal agencies and governmental, professional and lay agencies in the several states and communities. Cooperative action, however, has been, in the main, on separate and varied sectors. A single state with a specific health problem has often been the stimulus for nationwide action in that field. The particular interest of a national agency has been the source of cooperative action against a specific disease. In the National Health Conference, we witnessed a unique situation in which all the groups, which have hitherto sought individually to solve a single problem, united to consider a frontal attack on the total burden of preventable sickness and death in this country.

No single group of minds could devise a cut and dried plan to reduce at once the staggering aggregate of public health and medical care needs in this country. These needs remained unchallenged throughout the deliberations of the National Health Conference, and so far as is known, have not since been challenged. The Technical Committee on Medical Care, in the proposals which compose the second part of its report, considered ways and means by which these needs could be adequately met in a sound, comprehensive, and long-range program. These proposals were tentative in character and were submitted

as a basis for discussion and further development. It is not the purpose of this paper to present in detail the findings of the Technical Committee. A brief summary of the deficiencies in the existing health services of the nation, as revealed by our studies, should suffice as a basis for consideration of the broad program outlined at the National Health Conference. The present deficiencies in our health services fall into four broad categories:

1. Preventive health services for the country as a whole are grossly inadequate.

2. Hospital facilities are inadequate in many communities, especially in rural areas; financial support for hospital care and for professional services in hospitals is both insufficient and precarious, especially for persons who are unable to pay the costs of hospital care.

3. At least one-third of the population, including persons with no income, and those with very small income, receives inadequate or no medical service.

4. An even larger portion of the population suffers from the economic burdens created by illness.

For meeting these deficiencies with reasonable adequacy, the Technical Committee on Medical Care submitted five recommendations. In brief, they are:

- I. Expansion of general public health services—through health organization in states and communities, by combating specific diseases, and through maternal and child health services.

- II. Expansion of hospital facilities.

- III. The provision of medical care for the medically needy.

- IV. The development of a program of general medical care.

- V. The development of insurance against loss of wages during sickness.

Under the first three proposals the committee submitted estimates of the total additional annual expenditures by federal, state and local governments, to be reached during the gradual development of a ten-year program. These estimates represent the maximum expenditure when the several programs might attain operation on a full scale. Estimates as to the costs involved under Recommendations IV and V were left open. Recommendation IV is an alternative choice, and is concerned with methods of budgeting the cost of sickness and medical care rather than with additional expenditures. Relatively small additional expenditures were proposed for the initiatory stages of the expanding programs under Recommendations I, II and III. When these programs might reach their peak of operation, it was estimated that the total annual cost to federal, state and local governments would be \$850,000,000. This maximum estimate was proposed as a gauge of need.

Recommendation I proposes the expansion of our existing federal-state programs for public health, maternal and child welfare services under the Social Security Act. The committee stressed in particular the need for providing full-time, well organized health departments with professional trained staffs, including medical officers, nurses and other workers. The need for strengthening and expanding state and

local health departments as the only effective basis for further advances in the health care of the nation is at once apparent when it is considered that, even after two years of operation under the Social Security Act, less than one-third of the counties and even a smaller proportion of the cities employ full-time professional health officers. In many areas, even where full-time health departments are in operation, the services provided are extremely "thin." Under Recommendation I, statewide programs would be directed against tuberculosis, venereal diseases, pneumonia, cancer and malaria. These diseases, no less than epidemic diseases, are community problems. Owing to a number of factors they stand today among the major causes of death, suffering, and wasteful disability. Widespread in the population, serious in their effects, costly in treatment, these problems are of the gravest concern to the nation's health forces, all the more so because for these conditions we have developed effective measures of control. The health of industrial workers in their work places, and the mental health of the general population are two other fields of service for which additional facilities were recommended. In spite of recent developments under the Social Security Act, nearly a quarter of a million American women do not receive a physician's care in childbirth. Many thousands of mothers and newborn infants die annually because of grossly inadequate care during the period of maternity and the first month of life. It was therefore recommended that facilities be provided for the medical and nursing care of mothers and their infants, either at home or in the hospital. Some 10,000,000 children in this country go without adequate medical care. No community which has attempted to deal with the correction of defects among preschool and school children needs to be informed in detail of the difficulties attendant upon securing needed medical attention for this group of the child population whose families are unable to meet the costs. The proposed program includes provisions for medical care of older infants and children in families who cannot pay for these services.

Recommendation II proposes a federally aided state program of hospital construction which would add 360,000 beds to our present facilities. Since most of the new construction is needed in areas of low wealth, consideration was given to the difficulties which state and local governments might encounter in meeting the additional financial burden of maintenance for the new institutions or units during their first years of operation. Therefore, the committee recommended federal grants-in-aid for the maintenance of the new beds during the first three years after construction.

Recommendation III embraces a plan of medical care for medically needy persons. Approximately 40,000,000 Americans are found in this category. About half of the group are in families for whom federal, state and local governments have already assumed some responsibility under the provisions of the Social Security Act, or through direct assistance and work relief. The remaining group of some 20-

000,000 persons are in families whose incomes provide food, shelter, and clothing, but who cannot obtain prompt and adequate care during illness. These marginal income families often become dependent upon society for the fundamentals of subsistence when sickness strikes a member of the family, especially if the patient is the breadwinner. The heaviest burden of illness, both in amount and severity, falls upon this group of our population. Recommendation III proposes a federally aided state program to provide for these needy families medical, surgical and diagnostic services, appliances, medicines, bedside nursing service, emergency dental service, and hospitalization (except in cases of childbirth and for tuberculous and mental patients) at an approximate cost of ten dollars per person per year.

Recommendation IV considers the needs of self-supporting families of small or moderate means—a much larger group of the population who, although able to meet the costs of medical care for minor illnesses, find the costs of medical and hospital services in serious illness nothing short of a financial catastrophe. By reason of the variable and unpredictable nature of catastrophic illness, the independent family is unable to budget individually against the costs. To meet this widespread need, the committee recommended the development in the states of programs of medical care through the aid of the federal government. Either by group payments through health insurance, by public medical service paid out of tax funds, or by a combination of the two methods, the several states might launch approved programs suitable to their needs.

Recommendation V approaches the problem of loss of wages during sickness and proposes federal action toward the development of a program of disability compensation. When the breadwinner is thrown out of work by sickness, the family is perforce faced with a double economic crisis, not only in the costs of medical care, but in the loss of income. Under the existing workmen's compensation laws, almost all of the gainfully employed in this country are protected against accident or injury on the job, and in twenty-one states they are compensated for loss of wages as a result of one or more occupational diseases. The committee recommended that similar protection be provided against wage loss resulting from nonindustrial sickness or accident.

These proposals, which constitute a sound approach to the development of a nationwide program for the health protection and medical care of the whole population, are founded on the recognition of the principle that the health problems of the people are public problems. The chairman of the Interdepartmental Committee in her closing remarks before the conference drew attention to the fact that, "With insignificant exceptions, that concept has pervaded the discussions of the last three days." The discussions, in which about two-thirds of the delegates participated, brought to light a substantial agreement on fundamentals. There was agreement on many of the principles set forth in the five recommendations and on many of the specific objectives.

It was to be expected that some differences of opinion would be revealed as to the details of the program, but I believe it can be said, in the light of the general agreement on need and on principle, and of the co-operative spirit which pervaded the conference, that these difficulties are not insurmountable.

In closing, I should like to discuss briefly certain principles governing the development of the program presented in the five recommendations of the Technical Committee. The rôle of the federal government is clearly defined in every phase of the proposed program. The federal function of providing financial and technical aid to the states is already thoroughly familiar to legislative and administrative bodies throughout the country. In no part of the recommended program is it proposed that the federal government regiment the development, operation, or administration of the public health and medical care programs within the states. The autonomy of the state and local government is clearly recognized and stated. Moreover, the participation of professional and voluntary bodies is recognized and invited.

In connection with recommendations for the expansion of existing public health services, the committee was of the opinion that, "The procedure which now obtains in the administration of federal funds available for grants to the states under Title VI of the Social Security Act might well serve as a desirable guide for the future. It is proposed that the federal government would continue to provide leadership and technical advisory services which it now offers, in addition to financial aid to the states. Plan for the work would be initiated in the state health departments. The actual administration and control of activities carried on within the states would remain, very properly, in the hands of the state and local authorities. The chief function of the federal government would be that of acting as an equalizing agent among the several states in order to overcome inequalities in financial resources and public health problems, and to provide the leadership and guidance essential to the successful establishment and maintenance of a properly coordinated, nationwide attack on the important causes of disability and mortality in the country as a whole."

In a broad sense, this opinion applies to other phases of the program, maternal and child health services, expansion of hospital facilities, medical care for the medically needy, and a general program of medical care. With respect to the federal function in medical care of the medically needy, it was proposed that grants-in-aid be made to the states, and the committee emphasized that "the program would be developed around and would be based upon the existing preventive health services, and would of necessity be closely related with the services provided under Recommendations I and II." The committee further held that: "It is taken for granted that the medical and allied professions and institutions will participate in the administration of this program as has been the case in many states and communities." In this program for providing medical care for the needy, as in the program for public health services,

the primary administrative and operative responsibility would rest with state governments.

The committee again enunciated the principle of federal-state participation in considering a program for medical care of the whole population. "Federal aid to assist the states in the development of sound programs should be equally available to the states for the development of public medical services, health insurance, or a combination of the two. * * * Federal grants-in-aid to the states should be available within reasonably wide limitations as to the procedure, categories of services, or of population groups which a state may decide to assist. Federal grants-in-aid should be geared to approved classes of expenditures under a state program rather than to the administrative or financial techniques used by the state."

The estimated costs of the first three proposals of the Technical Committee resulted in considerable discussion in the public press. It was reported that the proposed program would cost eight and one-half billions. This misconception was apparently based on the assumption that the total maximum estimate of \$850,000,000 from all sources, federal, state and local, when the program might reach its peak, would be required annually for ten years. The principle which governed this estimate was that of the effectiveness of comprehensive, long-range planning. As was repeatedly stated, the program contemplated a gradual expansion over a ten-year period. The total of \$850,000,000 represents the total annual expenditure from all sources, federal, state and local, in addition to the sums now budgeted for public health, maternal and child health services, when the proposed program might attain its maximum scope and extent within the ten-year period.

Estimates for preliminary stages of the program were made for certain phases of the program, as:

Recommendation I-A, Public Health: For the first year, \$20,000,000 from federal, state and local sources, with gradual increases until the maximum of \$200,000,000 might be reached at the beginning of the seventh year.

Recommendation I-B, Maternal and Child Health: For maternity and infancy, during the first year, \$9,000,000, with gradual increases to \$50,000,000 in the fifth year, and to the full amount, \$95,000,000 in not less than ten years. For medical care of children, during the first year, \$6,000,000; \$30,000,000 by the fifth year; and not less than \$60,000,000 by the tenth year, provided that Recommendations II and III were not in full operation at that time.

Recommendation II: The total over-all cost of the hospital program is estimated at approximately \$1,104,500,000 for construction, plus \$177,000,000 for federal temporary maintenance grants, or an average annual expenditure of about \$146,000,000 for ten years.

Recommendation III: Medical Care for the Medically Needy. For the first year, \$50,000,000; in the fifth year, \$150,000,000; by the tenth year, \$400,000,000.

Thus, in the first year, it is estimated that approximately \$150,000,000 would suffice to launch sound,

well planned programs in these directions. Federal participation would amount to 50 per cent of the total expenditure, with the exception of temporary maintenance grants for hospital facilities which would be borne by the federal government.

Fear has been expressed in some quarters that financial participation by the government in meeting the cost of medical care for the poor would result in regimentation of the physician and lowering the quality of medical service. The program submitted by the committee deals only with the problem of financing payment for medical care, and does not go into the mechanism or mechanisms which might be set up for the rendering of professional service. That would be left largely to the individual states, to be worked out with the medical profession. It is to be assumed that neither the federal government nor the state governments would provide financial support for any medical care program which would permit lowering the quality of service or, which would not, in fact, improve the quality of service. The construction of diagnostic centers for practicing physicians in rural areas, an important part of the proposed hospital construction program, certainly should operate toward improvement in the quality of service.

Some persons have visualized in the hospital construction proposal a program which would result in the establishment of a little federally owned and operated government hospital in every town throughout the country, comparable to our federal post office buildings. The hospitals would be constructed and operated by the states. It can be assumed that no federal grant-in-aid would be made to any state until a thorough survey of local hospital needs had been made, which would serve as a basis for plans for additional construction. There is no intention of duplicating existing facilities or of interfering in any way with either the operation or construction of private hospitals; nor is there any intention of building additional hospital beds in localities where they are not now needed.

In the proposals of the committee, ample opportunity is given to federal, state and local governments, to professional groups, voluntary institutions and agencies, and to the lay groups of the population to proceed in an orderly system of evolution toward the achievement of their common goal—improved, continuing health and medical care services for all the people. Since the responsibility for the establishment and development of these services rests largely with the states and communities, the national health program provides not only an opportunity, but a compelling challenge to the ingenuity and cooperative spirit of the American people.

President Bernard: We are very fortunate this afternoon in having Monsignor Maurice F. Griffin, a member of the board of directors of the American Hospital Association, with us from Cleveland. He will speak upon the subject, "National Health Conference and the Present Hospital."

The Right Reverend Monsignor Maurice F. Griffin: All of our relations have a twofold aspect, individual and social; as they affect the individual himself, and

as they affect society in general. Neither may be stressed to the exclusion of the other. Man's nature demands both. If all the emphasis is placed on the individual, we have only the survival of the fittest and, economically, the unrestrained evils of capitalism. If all the influence and emphasis is placed on the social, we have socialism and the tyranny of the proletariat. In our generation, like a great ground swell rising from the consciousness of the common people, there arises a protest against the traditional individualism of the practice of medicine and hospitalization, because the human mind thinks in terms of social action when individual action becomes too burdensome.

Fortunately, our hospitals were the first to recognize their social obligations. They began the education of nurses and doctors to serve the general public outside of the hospital. They accepted their position as a health center, from which radiate for the benefit of the people in general all of the benefits of the outpatient department, the medical-social service, prenatal clinics, child welfare, maternal health, popular instruction in preventive medicine, and general health measures for the welfare of the people of the community in which the hospital serves. Hospitals, then, might well be expected to cooperate in any forward-looking movement for the health welfare of our people, for such has been their position throughout their organized history. Insofar as this is the general objective of the National Health Conference, there is no hesitation. There is, however, very proper discussion concerning ways and means of obtaining this objective and, most of all, concerning agencies and methods.

I would like to read for you the remarks of Mr. Altmeyer, chairman of the Social Security Board, at our convention recently in Dallas, Texas, in which he said that this report was suggested "for study, discussion and criticism," in which he asked us to study it, to criticize it, and to advise on certain phases of the problem. He continued: "It is only a trial beginning. It is no finished blueprint. It is only a first sketch. We will be grateful to you for any suggestions you can give us to bring some methods into the general and hospital service of the people of the United States." So the American Hospital Association adopted the following as its first contribution to this discussion. For forty years, the American Hospital Association has presented the composite picture of the hospitals of the United States. It has in its files all pertinent information concerning all of the hospitals in the United States checked up to date. It has gathered the administrators of these hospitals together in annual convention. It has asked their cooperation in every phase of hospital administration during the periods between conventions. The American Hospital Association, we believe, is a very competent organization to speak concerning the hospital service of the American people.

The American people, as a public policy, have developed a system of general hospitals, both voluntary and local tax-supported, to care for, without discrimination, both the indigent and the self-support-

ing classes. Appreciation of the excellence and the extent of our present hospitals must be the foundation upon which to build a national program of hospital service. Its development must safeguard their interest and particularly consider the effect of the extension of governmental activity in the form of grants-in-aid for service or new construction on the future of these institutions, and especially the effect of the generous impulses of the private philanthropy which has made most of them possible and which must not be considered as exhausted. The hospitals, because they are nonprofit, charitable institutions by the corporation granted the states under which they operate, must continue to give a large part of the service to the indigent group. A public service is a public trust. This public service of hospitals could well be enlarged by governmental grant.

The need is generally accepted for providing additional clinical and special hospital facilities for patients with mental disease, tuberculosis and cancer, the extension of public health work, maternity care, child welfare, and especially medical research; the hospitalization of old-age beneficiaries, and the care of the chronic invalid. The government has much to do in the care of the long-time cases. With regard to general acute hospitals, the fact that approximately one-third of their beds are, on an average, unoccupied indicates caution in the addition of any new facilities. There is a question as to how far existing defects in the distribution of general hospital facilities, especially in rural areas, could be corrected by the building of new hospitals, or should be corrected by the reorganization and enlarging of existing hospitals and, most of all, by the utilization of improved modern transportation. The American Hospital Association believes that new hospitals should be built in rural and urban areas, the principles are the same, only after accurate, impartial surveys, of population grouping, accessibility of existing hospital facilities, transportation, availability of professional personnel, economic resources of the community to be served, all show the absolute need of a new institution and, more, demonstrate that a new institution could be maintained according to good professional and financial standards. The Association believes these principles should guide all federal grants, whether part of the new National Health Program or of the present public works and relief projects.

The Association is on record as favoring the use of tax funds to reimburse hospitals for the care of the medically indigent. The proposal of the federal government to appropriate such funds would aid many states to provide more adequately for their people through the hospitals they now have.

The American Hospital Association approved the principle of hospital care insurance in 1933, and since that time has assisted by advice and guidance in the development of nonprofit, community-wide hospital insurance plans, now increasing at the rate of one million new subscribers per year. The growth of these plans should enable a majority of our em-

ployed people to meet the cost of hospital care on a voluntary basis and make compulsory health insurance unnecessary.

For the care of the seriously ill, and this on the first point, we believe it is necessary to have a proper appreciation of the extent and the excellence of present facilities. We believe it is necessary to appreciate what the American people have done to provide hospitals before a new program should be inaugurated. I was delighted at the assurance Dr. Waller gave us today, and the assurance Mr. Altmeyer gave us two weeks ago at the American Hospital Association convention. I only regret that that assurance was not included in the official report of the Technical Committee, and that the hospitals of the country were not given much encouragement in the National Health Conference. For the care of their seriously ill, the American people have been accustomed to turn to their hospitals built, and in large part maintained, by private donations. The depression affected the normal hospital financing so seriously that relief funds were necessary to maintain their operation at anything near normal capacity, and to meet the ever-growing load of free care they were called upon to render during the early days of the depression.

At the very beginning of the federal relief program, a joint committee representing the three great national hospital associations, the American Hospital Association, the Protestant Hospital Association, and the Catholic Hospital Association, tried unsuccessfully to interest the federal relief administration in the care of the indigent sick, particularly their own relief cases which required hospitalization. There were more than 100,000 empty beds in the hospitals of the country at the time we first went to Washington five years ago seeking to interest the federal government in the care of the indigent sick. The secretary of the American College of Surgeons is authority for the statement that 98.5 per cent of the population of the United States was within thirty miles of those 100,000 empty beds, and the secretary of the American Hospital Association is authority for the statement that last year the number of empty beds increased in all the general hospitals of the country to 180,000 empty beds. During this time, with the proper organization and the proper agreement on the part of the federal government to do what we had been trying to get it to do, namely, to interest itself in the care of the indigent sick, 25 million patients could have been taken care of, and much of the neglect, Dr. Waller, reported in your report of the Technical Committee would not have occurred, and it would not be easy now to impress upon the American people the statement that the hospital facilities of the country are woefully inadequate.

Any sincere movement to improve the health of the American people necessarily meets its most enthusiastic reception from those men and women who have dedicated their lives to the care of the sick. That group comprises 750,000 people working in our hospitals every day of the year; the doctors, the

nurses, the sisters, the administrators, the trained personnel; it includes the 135,000 practicing physicians in the United States, and the more than that of graduate nurses who are taking care of the sick in their homes. This army of inspired workers has led the health efforts of the American people to the extent that no nation has medical or hospital care comparable to ours. Under the guidance of their traditional and accepted leaders, the American people spent approximately \$600,000 a day for ten years before the depression, in addition to \$750,000,000 every year for operation, to provide additional hospital facilities for the United States. This, ladies and gentlemen, is not a thing to be brushed aside; it is not a thing to be ignored. It must be the foundation upon which to build a national health program. For nearly thirty years, the American people have thus produced almost 30,000 beds a year for the use of the American people, and have amassed a capital investment of more than \$35 for every man, woman and child under the American flag. Some of these institutions, particularly in the large cities, have been built by local tax funds, but the great majority of them have been built by voluntary contributions of American citizens.

There are almost 700 Catholic Sisters' hospitals in the United States. Protestant church organizations are responsible for about 300 more. The Jewish people have built many excellent institutions, and fraternal organizations have many special hospitals and sanatoriums to their credit. Hospitalization is one of the greatest achievements of the American people. It is one of the finest expressions of their public spirit, and the public spirit of a people is expressed not merely in its legislative action, but in its voluntary action as well. Side by side with our educational and religious institutions, our hospitals bear a relation to both, for they educate the nurses and the doctors, and they offer a vocation to those whose services are inspired by the noblest motives of human conduct. In the forefront of the world's progress in scientific and professional lines, our hospitals are distinctive because of the quality of care given to the indigent, as well as the self-supporting individual. In the words of President Roosevelt, "the same underlying motives are needed for both our government and our free, voluntary institutions, in order to preserve the true democracy of our institutions. We must strive for the fullest cooperation between the state and our free institutions, all seeking the highest good of our people."

The position of the American Hospital Association is, then, that the present hospital system must be given greater recognition. Therefore, the Association passed a resolution thanking Mr. Altmeyer, as spokesman of the Interdepartmental Committee, for asking the Hospital Association to appoint a committee, as the American Medical Association had done the week before, to cooperate and to consult with the Interdepartmental Committee, and was assured by Mr. Altmeyer that such cooperation would be utilized.

In the five recommendations which Dr. Waller

has outlined, there is reference and there are implications affecting hospitals in each. There are two definite recommendations concerning hospitals, and as long as Dr. Waller did not emphasize them, I feel it is necessary for me to do so. The first is, "To build 500 health and diagnostic centers in areas which are without local hospitals, but are adjacent to areas having hospitals." The second is, "To construct at least 500 hospitals of from thirty- to sixty-bed capacity in rural and sparsely settled regions which have inadequate hospital facilities." Confusion arises concerning these very definite recommendations, and this confusion causes most of the apprehension in hospital circles. The areas adjacent to areas having hospitals are to have health centers; all well and good. The regions in sparsely settled regions are to have hospitals. From the preceding paragraphs of the report, one must infer that these regions are the approximately 1300 counties of the United States having no registered hospital. The confusion is increased by the statement that "special surveys would have to be made to determine which of these counties are adequately served by hospitals in adjacent counties, and which need hospital facilities." It might be inferred that such surveys had not been made, and yet the report proceeds, in the very next paragraph, to state categorically that 500 health centers and 500 hospitals would have to be built.

While the Technical Committee seems not to have made that survey, the American Medical Association seems to have made it, the American College of Surgeons made it, the American Hospital Association made it, and their conclusions were absolutely contrary to the implications included in the conclusion of the Technical Committee's report. The American Medical Association, as many of you know, reports: "Of the 1300 counties there are three which are in areas that are not contiguous to areas in which there are hospitals." The report continues: "Of these 1300 counties there are only five," or eight, I have forgotten which, "that have a population of more than five people per square mile." Truly one can say that is "reductio ad absurdum." It is taking the same thing and getting something entirely different from it. To me, that means that the yardstick they have used, namely, the county, was absolutely inappropriate.

Then, too, professional groups, like the Technical Committee, take a tabulation of counties and come to one conclusion that really is hair-raising if you consider what a bugaboo it is to say that forty-two per cent of the counties in the United States have no hospital facilities. The implication is that the people of the United States are really in a bad way. If you listen to the American Medical Association, you will say, "That is a bluff; there is nothing to worry about there at all." So I say that the use of the county is not a satisfactory unit. The county, rather than the consideration of population grouping, economic conditions, transportation, and availability of professional personnel; the use of the

county brought forth the most acrimonious discussion in the National Health Conference. It occurred to me that, after all, the interest of the county is just historical. It has very few modern social implications. It still has a little political attractiveness because of the tax traditions. Counties can raise money, in addition to municipalities. We in Ohio, I suppose you do this everywhere else, make arrangements with the county commissioners of half a dozen different counties contiguous to the county in which there are ample hospital facilities, and those county commissioners in those adjacent counties pay for their indigent patients, just the same as if the institution were within the limits of their own county. So, too, we have several counties go together on tuberculosis sanatoriums. There does not seem to be any particular reason why counties cannot do this. In other words, the woodenness of the county line seems to disappear. Therefore, I do not see any particular reason for using the one thing that is causing the most difficulty.

We of the American Hospital Association feel that we are for a national health program. We want the committee to be able to put it over, to sell it to the American people, but we see the difficulties they have caused for themselves and we believe it is to the best interest of all concerned to eliminate those difficulties. As a matter of fact, the county was, with us, a conveniently small unit of government in the old horse-and-buggy days, when a farmer could drive in to the county seat, pay his taxes, and get back home the same day; but we have gone beyond that. In public education, we eliminated the county as a unit by establishing school districts. Likewise, in the same progressive spirit, and we want the public health program to appeal to the public, not in a backward, horse-and-buggy-day philosophy, but in a progressive spirit, we did away with the little red schoolhouse and established centralized schools. Now, shall we ask time to turn backward in its flight and start filling the land with little red-schoolhouse hospitals?

Great fleets of busses all over the country carry our school children to centralized schools. Cannot our modern ambulances use those same fine highways with the school busses, travel right along with them and bring patients to the already established and generally accepted medical centers? This is exactly what the newer, progressive nations are doing. Australia, with her excellent system of providing health service for all her people, brings them in after the bush nurse, as she is called, finds the cases, reports to the health center and the clinic and the base hospital, and on in to the large, perfectly manned, completely equipped centrally located hospital. Our neighbor to the north, Canada, supplements her ambulance system with, I think, fifty ambulance planes. In Iowa, I understand that your twenty ambulances of the University of Iowa Hospital transport patients into every one of your ninety-nine counties three times a week. Yes, right

here at home we have progressive, up-to-date states that could show the federal government what a modern program could be.

I might go on to say that another source of confusion which weakens the report, it seems to me, were these staggering figures that go to show the loss of wages during illness. There are so many million people sick every day. The average wage in the United States is so much, and so every day the people of the United States lose so much in wages. Well, of course they would if they had had a job, but that presupposes that everybody who got sick had a job and that they would have been working all the while they were sick. That doesn't go when you have between twelve and fifteen million people unemployed, employable and not at work. Those are the same sort of figures you see for the even more staggering tabulation concerning the future wage loss. These things, it seems to me, weaken the report. I think the greatest confusion resulted from the name itself.

Dr. Waller was very proud of the personnel of that meeting. Your fellow citizen, President Neff, of the American Hospital Association, and myself were the only representatives of hospital organizations in that crowd. We were kind of lonesome. The Catholic Hospital Association was not recognized at all, although they have about 700 very fine hospitals. The Protestant Hospital Association was not recognized at all, although they are members of the joint committee which had been dealing with the government very effectively for the past five years. All these folks that Dr. Waller referred to were there—the president of the (I was going to call it dock wallopers, but that isn't it) Longshoremen's Union; Harry Bridges' right-hand man sat beside me; and there was another gentleman from the Lower East Side, representing the Federal Labor Relations Board, next to him. There was a young lady from Chicago who represented the Woman's Auxiliary to the C. I. O., and did she take a crack at Cook County Hospital! By the way, that is the only hospital which anybody mentioned to say anything against, and that is a government hospital, you know. The medical profession was on the pan for the three days, but we of the American Hospital Association sat there very smugly and did not have anything to say. Strange to say, I did not speak. One of the men came to me later and said, "You know, that conference was very complimentary to the hospitals. They thought so much of hospitals that they thought they had better build 500 more right away."

We were not on the defensive; but, if I am pardoned for saying it, it was the first time in more than a quarter of a century that I sat in on a conference, the one definite recommendation of which was to build 500 hospitals, in which there were so few hospital people present. If I had not known just what they meant, I would have felt very bad, but of course I knew, living on the east side of Cleveland as I do. I can drive for ten minutes due east, and I am in one of those terrible counties,

Lake County. We have some beautiful summer cottages along the lake shore, and a few little villages, and it has a pretty good hospital; but it is not a registered hospital, so it does not count. Therefore, Lake County was one of the 1300 bad ones. If I did not go east, I could go south and in fifteen minutes I would be up against another one, Gauga County. It has no hospital, but of course it has nothing else, so I was not worried so much when they got through ringing the Chinese on those 1300 counties, because I knew, after all, those folks in those counties would not go to them.

Of course Dr. Cabot got a rise out of the entire medical profession in the country by saying that the practice of medicine was absolutely medieval. He got a great hand from the four hundred Dr. Waller spoke of who were in the galleries. The meeting has been described as a "consumers' convention," which I think is very apt. That is why no hospital folks were there, the assumption being that the hospitals were the producers of a commodity which the consumers consumed. One of the outstanding features of the consumers' attitude was that they did not like to be sick and they did not like to go to hospitals, and so they did not like to pay for it. That attitude held, not for the indigent or the medically indigent, but for those who were receiving up to \$3000 or \$5000 a year. That, of course, as Mr. Green, who was present, said, would include 87.5 per cent of the working men of the United States. By the way, Mr. Green (and I am not taking sides with the C. I. O. or the American Federation of Labor, because our Hospital Association deals with both organizations) was very matter of fact. He said, "Sure, I am for building 500 hospitals. That will put a lot of our fellows to work." That was rather technical, I thought, but the representatives of the consumers just brushed aside the application of the insurance principle on a voluntary basis, and thought that the American people had to be driven into compulsory health insurance. We do not agree with that. Fifty-two per cent of all the employed people in the city of Cleveland are already purchasing hospitalization at the rate of fifty or sixty cents a month, and we have only been operating a little over three years. In the city of New York, approximately one million, in three years, have accepted the insurance principle on a voluntary basis. We do not believe compulsory health insurance is necessary.

In conclusion, let me say that the attitude of the people should be a most important consideration in the building of 500 rural hospitals. Individual rapid transportation and an ever-increasing network of good roads has changed the attitude of our rural population. The isolation of the farmer, individual and social, has gone with the march of progress. The farmer, as well as the small-town folks, now drive into the city for their recreation, their shopping, their medical service and hospitalization. I am afraid that if the government built crossroads hospitals, it could not get the people to go to them. We cannot ignore the habits of our rural population

and their social development. We should not start on a program of bringing a lot of little hospitals to the scattered population; rather, we should do everything that the luxury of modern transportation affords to bring these people to the better established medical centers. Ambulances are far cheaper and easier to run than hospitals. We should never take federal funds which should go to special disease care, medical research, mental, tuberculosis and cancer hospitals, public health work, maternal and child welfare, and spend them on hospitals when we have hospitals now. Let's put the American working man on a self-supporting basis by developing our voluntary insurance plans for hospital care. Let's mobilize the 750,000 trained workers we now have in our present hospitals to take care of the sick. Let's fill the 180,000 empty beds. An Executive Order from Washington to pay for the indigent sick would do that. Let's make a real contribution to the public welfare as a result of the National Health Conference.

President Bernard: I will take this opportunity to thank you, ladies and gentlemen, for your attention and your attendance, and I assure you that the inter-professional group appreciate it very, very much. We also wish to thank Dr. Waller and Monsignor Griffin for their long trips and very scholarly talks this afternoon. The meeting is adjourned.

SPEAKERS BUREAU ACTIVITIES

October and November

During the month of October the Speakers Bureau presented programs before seven Women's Clubs, ten Parent-Teachers Associations, eight service clubs, two college audiences, and one high school audience, a total of twenty-eight meetings. In addition to this, the regular postgraduate work was in progress, with forty-five in attendance at Dubuque, forty at Fort Dodge, and approximately thirty, thirty-five, and thirty at Emmetsburg, Sheldon and West Union, respectively.

The Speakers Bureau November schedule includes eighteen programs, three for college audiences, six for Women's Clubs, eight for Parent-Teachers Associations and one for service clubs. Four radio talks were given in October, and four more will be presented in November on the regular Speakers Bureau program. One radio broadcast will be especially prepared and delivered on November 21 over Station KSO for the Iowa Federation of Women's Clubs.

Four pediatric lectures remain on each of the two "refresher" courses being conducted this fall. The enrollment at each of these two centers has reached approximately forty.

Luther College Schedule

The Speakers Bureau is again conducting a series of talks for the students of Luther College in De-

corah. The following lectures have been arranged:

- Oct. 6 Modern Surgery, H. P. Moen, M.D., West Union.
- Oct. 20 Physiology of Reproduction, E. D. Plass, M.D., Iowa City.
- Nov. 3 Medical Science in the Service of Health, M. E. Barnes, M.D., Iowa City.
- Nov. 17 Cancer, F. P. McNamara, M.D., Dubuque.
- Dec. 1 Tuberculosis, J. C. Painter, M.D., Dubuque.

WOI and WSUI—Tuesdays at 4:00 p. m. Radio Schedule

- Nov. 1 Constipation, W. H. Rendleman, M.D.
- Nov. 8 Jaundice, G. M. Crabb, M.D.
- Nov. 15 Sleep, John H. McClintock, M.D.
- Nov. 22 Speech Defect, C. E. Oberman, Associate in Psychology.
- Nov. 29 Bright's Disease, Aldis A. Johnson, M.D.
- Dec. 6 Upper Respiratory Infections, Harry H. Lamb, M.D.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees, October 2, 1938

The Board of Trustees of the Iowa State Medical Society met at noon Sunday, October 2, at the Hotel Fort Des Moines in Des Moines. Those present were O. J. Fay, L. R. Woodward, and John I. Marker, trustees, and Roland Stahr of Fort Dodge, who presented the Webster County recommendation for interprofessional organization in the state. Following Dr. Stahr's discussion, business was transacted as follows: 1. Minutes of meetings of June 10 and September 11 read and approved; 2. Bills authorized; 3. Payment of balance due on cancer manual authorized; 4. Appropriation of funds for Fracture Committee; 5. Appropriation of funds for guest speakers for annual meeting. Meeting adjourned at one-thirty.

CANCER PROGRAM IN CHICAGO

The Institute of Medicine of Chicago announces that its Fifteenth Pasteur Lecture will be given jointly with the Cancer Research Institute of the Chicago Woman's Club at a public meeting to be held on Tuesday evening, November 22, at 8:15 o'clock in the auditorium of the Museum of Science and Industry, Jackson Park, Chicago. Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases, Chicago, and of the National Advisory Cancer Council, Washington, D. C., will speak on "Progress in the Knowledge and Control of Cancer." Through the courtesy of the Museum of Science and Industry, the medical exhibits will be open to those attending the session for visiting and inspection. Iowa physicians are cordially invited to be present.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

Dallas-Guthrie Society

The Woman's Auxiliary to the Dallas-Guthrie Society met in regular session in the Women's Club rooms at Panora, Thursday, October 20, following a one o'clock luncheon. Reports of the State Meeting held in May were given by the delegates, Mrs. Keith Chapler of Dexter and Mrs. Charles E. Irwin of Woodward. Mrs. E. T. Warren of Stuart gave a report of her attendance at the National Meeting in San Francisco. Mrs. Dean W. Harman of Glenwood was the speaker of the afternoon. She wove her talk around the following four objectives to be accomplished by the Auxiliary:

1. Extend aim of medical society to all organizations interested in health.
2. Assist in entertainment work at State Meetings.
3. Promote friendship among families of physicians.
4. Continue to cooperate with medical societies in all tasks for which they ask our help.

Mrs. C. E. Mershon, Secretary

Polk County

The Woman's Auxiliary to the Polk County Medical Society met at the Hotel Fort Des Moines for a luncheon on Tuesday, October 4. Following the luncheon, the president introduced several new members and conducted a short business meeting. Mrs. Harnagel, program chairman, presented Mrs. Daniel J. Glomset, who gave an interesting talk entitled, "A Story and Its Sequel." Announcement was made of an informal guest night for husbands of the members to be held at the Hotel Savery on November 1. Bridge during the afternoon was in charge of Mrs. John C. Parsons, assisted by Mrs. H. C. Willett.

Mrs. Harry W. Dahl, Secretary

The National Health Program

In response to the many requests which have come to your state Press and Publicity Committee for detailed information concerning the widespread discussion of national health policies, we have prepared the following statement which we hope will give our members a concise, accurate, simplified resumé of the activities in this field.

Events moved rapidly after the last annual convention of the American Medical Association in San

Francisco, and when it became apparent that the administration intended to introduce legislation at the next session of Congress looking toward the extension of medical care on a nationwide scale, it was deemed advisable to call a special session of the House of Delegates of the American Medical Association. That session, as you know, was held in September, and the now famous five point program, originally introduced to the public at the National Health Conference held in Washington, D. C., on July 18, was thoroughly studied and discussed. Each division and subdivision of the health program was definitely accepted or rejected, and the members of the medical profession and laity alike were left in no doubt as to the position taken by the American Medical Association.

As a result of this session, a special meeting of the House of Delegates of the Iowa State Medical Society was called for October 2, so that definite action could be taken regarding our stand on these important matters. A complete detailed report of these two meetings, both national and state, can be found in the October issue of the JOURNAL, pages 494 to 497. In addition, the Medical Economics Committee of the Iowa State Medical Society has prepared for the convenience of its members, a brief summary of each of the five major recommendations, showing first, the recommendation as it was presented by the National Health Conference; second, the recommendation as accepted or rejected by the American Medical Association House of Delegates; and third, the action taken on that particular recommendation by the Iowa State Medical Society House of Delegates. The article is being published in this, the November issue of the JOURNAL, pages 574 to 576.

We are glad to know that our auxiliary members are anxious to have all available information regarding these matters, and we feel that a study of the articles mentioned will give each and every member a comprehensive knowledge of the situation. The auxiliary can be of inestimable value to the medical profession if its members will study the programs proposed, understand them completely, and actively work toward the goal of educating the public, not necessarily in large formal meetings, called expressly for that purpose, but rather in those intimate informal gatherings of which every physician's wife is a part. The vast amount of good radiating from these small groups has never been realized. However, these benefits will be in proportion to our understanding of the problems—and so we urge you to be informed.

Mrs. Fred Moore, Chairman

SOCIETY PROCEEDINGS

Buchanan County

The third quarterly meeting of the Buchanan County Medical Society was held at the Hotel Gedney in Independence, Thursday, September 15, with Donald C. Conzett, M.D., of Dubuque, as guest speaker. Dr. Conzett spoke on Modern Concepts in the Treatment of Fracture, with special reference to fracture of the neck of the femur. The meeting was enjoyed by all present, as was indicated by the number who entered into the discussion of the paper.

Nelson L. Hersey, M.D., Secretary

Dallas-Guthrie Society Annual Meeting

The annual meeting of the Dallas-Guthrie Medical Society was held in Panora, Thursday, October 20, and officers elected for the coming year are: Dr. H. E. Haymond of Perry, president; Dr. M. H. Brinker of Yale, vice president; Dr. S. J. Brown of Panora, secretary and treasurer; Dr. E. T. Warren of Stuart, delegate; and Dr. K. W. Diddy of Perry, alternate delegate. The scientific portion of the program consisted of a paper by W. R. VanDuzer, M.D., of Casey, on Modern Reconstructive Treatment of Poliomyelitis. Dr. Robert L. Parker of Des Moines, secretary of the State Society, was present, and gave a brief talk on Medical Economics.

Jasper County

Lewis M. Overton, M.D., of Des Moines, furnished the scientific program for the Jasper County Medical Society when that organization met in Newton, Tuesday, November 1. His subject was Fractures of the Lower Extremities, and he was assisted by J. A. William Johnson, M.D., and Marvin Wright, M.D., both of Newton, who showed lantern slides and x-ray photographs of unusual fractures.

Johnson County

The November meeting of the Johnson County Medical Society was held at Oakdale Sanatorium, Wednesday, November 2. Following the six-thirty dinner F. M. McPhedran, M.D., of Philadelphia, addressed the group on Reinfection Tuberculosis.

W. M. Fowler, M.D., Secretary

Linn County

On Friday, November 11, the Linn County Medical Society entertains Roger Anderson, M.D., of Seattle, Washington, as guest speaker. He speaks on Ambulatory Method of Treating Fractures of the Shaft of

the Femur, and also on The Anatomic Method of Treating Fractures of the Leg.

Attention is directed to the December 15 meeting of the Society, at which time John P. Peters, M.D., of the Yale University School of Medicine, will be present to address the Society and its guests. Dr. Peters will first deliver a scientific lecture on Nephritis, and will then discuss medical economics.

T. F. Hersch, Chairman
Program Committee

Marshall County

The Marshall County Medical Society held its first fall meeting in conjunction with the Marshall County Interprofessional Association, Tuesday, October 4, at the Hotel Tallcorn in Marshalltown. Alfred W. Adson, M.D., of The Mayo Clinic, Rochester, Minnesota, spoke on The Effect of Social Changes on Scientific Medicine.

Polk County

A social evening, generally conceded to be the most enjoyable of recent years, afforded entertainment to the Polk County Medical Society, Tuesday, November 1. The meeting was sponsored by the Woman's Auxiliary to the Polk County Medical Society. Approximately one hundred and sixty physicians and their wives sat down to dinner at the Hotel Savery in Des Moines. During the dinner hour entertainment was provided by a group of artists, including dances, vocal solos and accordion numbers. Following the dinner, further entertainment was arranged in the way of a contract bridge tournament and a chinker check contest. Headed by Mrs. Arthur E. Merkel, president of the Woman's Auxiliary, the following doctors' wives deserve special commendation for their share in making the evening so enjoyable: Mesdames Edward H. Harnagel, Harry E. Ransom, L. K. Meredith, George H. Watters, Wilbert W. Bond, John H. Matheson and Floyd M. Burgeson. It is to be hoped that similar evenings will be a feature of medical social affairs in Polk County.

E. M. Kingery, Executive Secretary

Pottawattamie County

The Pottawattamie County Medical Society announces the presentation of a special fracture program, Monday, November 7, at the Chieftain Hotel in Council Bluffs with the following speakers: Robert D. Schrock, M.D., of Omaha, on Fractures of the Ulna and Radius at the Wrist; H. Winnett Orr, M.D., of Lincoln, on The Prevention and Control of Infection

in Fractures and Other Bone Surgery; Karl R. Werndorff, M.D., of Council Bluffs, on Fractures of the Spine; Arthur Steindler, M.D., of Iowa City, on Fracture Deformities of the Ankle; and Charles Scudder, M.D., of Boston, Massachusetts, on first, Regional Fracture Committees of the United States, and second, Fractures of the Os Calcis (moving pictures).

F. H. Beaumont, M.D., Secretary

Scott County Annual Meeting

The regular scientific session of the Scott County Medical Society was held Tuesday, October 4, at the Lend-A-Hand Club in Davenport. Following the six o'clock dinner and business meeting, the group was addressed by John M. Waugh, M.D., of Rochester, Minnesota, on Management of Uterine Fibroids.

The annual election of officers of the Society was held Tuesday, November 1, with the following results: Dr. W. F. Skelley, president; Dr. E. G. Senty, vice president; Dr. P. E. Gibson, secretary; Dr. T. W. McMeans, treasurer; and Dr. George Braunlich, delegate.

H. A. Meyers, M.D., Secretary

Tama County

The Tama County Medical Society met at Garwin, Thursday, September 29, and viewed a sound motion picture film on The Diagnosis and Treatment of Syphilis, shown and discussed by Robert F. Hansen, M.D., of the State Department of Health, Des Moines.

Washington County

Members of the Washington County Medical Society were entertained by the Washington County Dental Society at a meeting held in Washington, Wednesday, October 19. A symposium was presented by Olin E. Hoffman, D.D.S., and A. Paul Atkins, D.D.S., both of Des Moines, on Dental Diagnosis and the Interrelation of Dentistry and Medicine.

Winneshiek County

A meeting of the Winneshiek County Medical Society was held at the home of Dr. A. F. Fritchen in Decorah, on Tuesday, October 11, and R. M. Dahlquist, M.D., spoke on The Mode of Action and Uses of Sulfanilamide. Dr. Dahlquist has just recently located in Decorah, coming direct from New Jersey.

L. J. Hospodarsky, M.D., Secretary

Woodbury County

Ruben Nomland, M.D., professor of dermatology, State University of Iowa, College of Medicine, was guest speaker for the Woodbury County Medical Society, Wednesday, October 12, at a dinner meeting held at the West Hotel in Sioux City. Dr. Nomland spoke on Eczema. Dr. John H. Henkin of Sioux City presented a comprehensive summary of the special

session of the House of Delegates of the American Medical Association held in Chicago, September 16 and 17.

W. H. Gibbon, M.D., Secretary

PERSONAL MENTION

Dr. Leonard A. West of Des Moines has announced the removal of his offices from 512 Iowa-Des Moines National Bank Building to 1010 Equitable Building.

Dr. James H. Bruce of Fort Dodge was the guest speaker for the Kossuth County Interprofessional Society at a meeting held recently in Algona. Dr. Bruce, who has just returned from a European trip, spoke on medical care as it is carried on in Europe.

Dr. Arthur M. Merritt of Des Moines is changing the location of his offices from 512 Iowa-Des Moines National Bank Building to 726 Fleming Building.

Dr. Peirce D. Knott of Sioux City addressed the Ida Grove Woman's Club Tuesday afternoon, October 4, at a meeting held in the home of Mrs. Wilbur F. Swan. Dr. Knott's subject was, "Diet and Discipline of the School Child."

Dr. John H. Faust, who for the past three years has been associated with Dr. R. G. Bird at the Clarion Hospital in Clarion, has moved to Manson, where he plans to take over the practice of the late Dr. T. B. Herrick. Dr. Faust is a graduate of Northwestern University Medical School, and in addition to his years in Clarion, spent five years with the Huron, South Dakota, Clinic.

Dr. Fred Moore of Des Moines was the speaker for the third forum meeting of the Indianola Adult Education Council Tuesday, October 25. The subject of the evening was "The National Health Program," with Dr. Moore leading the discussion of the topic.

Dr. Carl E. Sampson of Creston has announced that Dr. Russell I. Williams of Kearney, Nebraska, will arrive in Creston November 15, to be associated with him in the practice of eye, ear, nose and throat diseases. Dr. Williams was graduated in 1936 from the University of Nebraska, College of Medicine.

Dr. N. C. Barwasser of Davenport, Iowa, and Moline, Illinois, has just received word of his acceptance as a fellow in the American Academy of Dermatology and Syphilology. He has been practicing in Davenport for the past three years.

Dr. Carl H. Jonas, who was graduated in 1937 from the St. Louis University School of Medicine, has joined the medical staff of the Cherokee State Hospital, according to a recent announcement by the superintendent, Dr. C. F. Obermann. Dr. Jonas comes to Cherokee from Saginaw, Michigan, where he has just completed his internship at St. Mary's Hospital.

Dr. Nelle S. Noble of Des Moines spoke before the Polk County Federation of Women's Clubs Tuesday, October 11, at Berwick. Dr. Noble discussed "Health in Relation to the Community."

Dr. Jay S. Terrill of Bedford announces the association with him of Dr. Abraham Wolkin, who was graduated in 1935 from the Universität Bern Medizinische Fakultät, Berne, Switzerland. Dr. Wolkin has just completed his internship at Sea View Hospital, West New Brighton, Staten Island, New York.

Dr. Andrew H. Woods, director of the State Psychopathic Hospital in Iowa City, addressed the Economic Club in Des Moines Wednesday, November 2, on "The Roots of Juvenile Delinquency." The meeting was sponsored by the crime study group of the club.

Dr. Lloyd H. Mattice is locating for the practice of medicine in Sutherland, coming direct from Duluth, Minnesota, where he has completed his internship at St. Luke's Hospital. Dr. Mattice was graduated in 1937 from the State University of Iowa, College of Medicine.

Dr. Benjamin C. Hamilton, Jr., of Jefferson delivered a paper before the Iowa Clinical Medical Society, at a meeting of that organization held in Fort Dodge Saturday, October 1, on "Respiratory Diseases of Children and Complications."

Dr. Karl R. Luthy of Seymour for the past five years, has left that locality to take up a course of training in the headquarters of the Iowa Division of the CCC Camp at Fort Des Moines, Iowa.

Dr. William C. Porath of Storm Lake was guest speaker for the regular weekly meeting of the Storm Lake Rotary Club Tuesday, September 27. Dr. Porath spoke on "Socialized Medicine, and the History of It in Europe."

Dr. Nicholas Schilling of the New Hampton Clinic has announced the addition of Dr. Siegmund Singer of Vienna, Austria, to the staff of the clinic. Dr. Singer is to be in charge of the x-ray department.

Dr. John C. Parsons of Des Moines spoke before the Jordan School Parent-Teachers Association in Ames Tuesday, September 27, on "Tuberculosis and the Tuberculin Test."

MARRIAGES

The marriage of Miss Betty Burk and Dr. John Searle Giffin, both of Waterloo, took place Saturday, October 8, at the Christ Episcopal Church in Waterloo. The couple left on a trip through the southern states, returning to Waterloo soon after November 1, where Dr. Giffin has entered the practice of Medicine.

DEATH NOTICES

DePree, Seine Bolks, of Sioux Center, aged sixty-five, died October 3 of cancer. He was graduated in 1903 from Rush Medical College, University of Chicago, and had long been a member of the Sioux County Medical Society.

McManus, Thomas Ulysses, of Waterloo, aged sixty-five, died November 5, as the result of complications after an attack of pneumonia. He was graduated in 1898 from the University of Illinois, College of Medicine, and at the time of his death was a life member of the Black Hawk County and Iowa State Medical Societies.

Young, William Madison, of Jefferson, aged eighty-one, died September 30, after being ill for several months with a heart ailment. He was graduated in 1881 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a life member of the Greene County and Iowa State Medical Societies.

Youngs, Daniel Lewis, of Clarksville, aged seventy-three, died October 31, after an extended illness of several months. He was graduated in 1895 from Drake University College of Medicine, and had long been a member of the Butler County Medical Society.

INVITATION EXTENDED TO VISITING PHYSICIANS

The International Physicians' Luncheon Club of New York extends a most cordial invitation to physicians visiting New York to be guests at the international noon luncheons, which are served at the International Medical Center, 135 East Fifty-fifth Street, New York, every Tuesday at one o'clock. While guests are not requested to make speeches, any useful information they wish to give informally will be greatly appreciated as fostering medical progress and international good will among physicians from all parts of the world. Iowa physicians visiting New York will doubtless be glad to avail themselves of this opportunity to meet and discuss medical problems with such a cosmopolitan group.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

Thomas Ulysses McManus - - 1872-1938

Thomas Ulysses McManus was born at Hudson, Iowa, August 6, 1872, the son of Thomas P. and Sarah Rupp McManus, and died November 5, 1938, at his home in Waterloo, as a result of a rare type of pneumonia. He attended the Iowa State Normal School in Cedar Falls, and Des Moines University in Des Moines, receiving his doctor of medicine degree from the University of Illinois, College of Physicians and Surgeons, in 1898. In August of 1898 he was married to Mae Loonan, who with one son, Thomas L. McManus of Waterloo, survives. Dr. McManus was a member of the Iowa State Board of Health from 1909 to 1916. He not only served as president of the Waterloo and Black Hawk County Medical Societies, but in 1929 was elected president of the Iowa State Medical Society. During his term as president he was active in sponsoring and promoting the postgraduate extension courses under the direction of the Speakers Bureau Committee. The present high standards and popularity of the courses must be credited in part to Dr. McManus' enthusiastic and untiring efforts in acquainting the physicians of Iowa with the many advantages these courses would bring to them.

* * * * *

An Appreciation

*"I pray thee that a double portion
of thy spirit be upon me."*

Dr. Thomas U. McManus is gone. There are hundreds of physicians in Iowa who ardently wish that Dr. McManus had left his mantle with them, and there is nothing he would rather have done. Life would be drab indeed if personalities such as Dr. McManus' were entirely destroyed by death, but we know such is not the case. Socrates still lives; Hippocrates and Osler also are very much with us. So, too, Dr. McManus' influence

will continue to be felt by generations of practitioners of medicine to a degree which would gladden the bereaved ones if they but realized the extent of it.

Not only did he possess the high ideals of the Master Physician, but those best acquainted with him know he spared no effort and suffered much grief in order that the medical profession in Iowa should include the most ideal practitioners of medicine in the country. We remember the night that handicapped man drove to Sioux City and back to urge his colleagues in that city to take advantage of a postgraduate course, and many other trips on stormy nights in behalf of the Society he served so well. During his administration there were some who sought to create dissension in the state organization, but Dr. McManus bore personal abuse as well as hardship gladly, so that humanity might suffer less, and so the doctors in Iowa could present a more united front to the people.

He was the father of the present postgraduate studies in our state, and I have many times heard him say that the main benefit which accrued from these courses was not the new knowledge imparted by the speakers, but the opportunity offered for physicians to break bread together so that they could discover what "wonderful chaps their competitors were." Some day I hope the profession in Iowa will carry through the scheme which lay nearest to Dr. McManus' heart: that in every city and hamlet in the state the physicians should designate one place where they could come together for lunch for informal chats—a place where traveling physicians passing through the town could come for lunch and to get acquainted.

Everyone who knew Thomas McManus as I did, has but one prayer when we think of him—that "a double portion of his spirit be upon us."

Daniel J. Glomset, M.D.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- APPLIED ANATOMY**—By Robert H. Miller, M.D., associate professor of anatomy, University of Tennessee, College of Medicine. Lea and Febiger, Philadelphia, 1938. Price, \$6.50.
- DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS**—By George W. Norris, M.D., formerly professor of clinical medicine, University of Pennsylvania; and H. R. M. Landis, M.D., formerly professor of clinical medicine, University of Pennsylvania. Sixth edition. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.
- DR. COLWELL'S DAILY LOG FOR PHYSICIANS**—A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1938.
- ENDOCRINE THERAPY IN GENERAL PRACTICE**—By Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1938. Price \$2.75.
- INTERNAL MEDICINE: ITS THEORY AND PRACTICE**—Edited by John H. Musser, M.D., professor of medicine, Tulane University of Louisiana, School of Medicine. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.
- PLASTIC SURGERY**—By Arthur Joseph Barsky, M.D., D.D.S., associate surgeon in charge of the Department of Reconstructive Surgery, Beth Israel Hospital, New York, N. Y. Illustrated. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.75.
- HUMAN PATHOLOGY**—By Howard R. Karsner, M.D., professor of pathology, Western Reserve University, Cleveland, Ohio. Fifth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$10.00.
- THE PNEUMONIAS**—By Hobart A. Reimann, M.D., professor of medicine, Jefferson Medical College, Philadelphia. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.
- PRACTICAL MICROBIOLOGY AND PUBLIC HEALTH**—By William Barnard Sharp, M.D., professor of bacteriology and preventive medicine, Medical Department of the University of Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.
- THE PRINCIPLES AND PRACTICE OF OBSTETRICS**—By Joseph B. DeLee, M.D., professor of obstetrics and gynecology, emeritus, University of Chicago. Seventh edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$12.00.
- SURGICAL PATHOLOGY**—By William Boyd, M.D., professor of pathology, University of Toronto. Fourth edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.
- THE 1938 YEAR BOOK OF PHYSICAL THERAPY**—Edited by Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1938. Price, \$2.50.

BOOK REVIEWS

CLINICAL ENDOCRINOLOGY

By Samuel A. Loewenberg, M.D., clinical professor of medicine, Jefferson Medical College, Philadelphia. With 194 illustrations and 37 charts and tables. F. A. Davis Company, Philadelphia, 1937. Price, \$8.00.

Our knowledge of endocrinology has multiplied itself many fold during the past decade. As a result the average practitioner, or in fact, those specializing in internal medicine, have experienced difficulty in keeping abreast of the newer findings and observations. For this reason alone the author of this volume may justify his publication; however, as one views the completeness with which the subject is treated and the really new contributions which have been made to our knowledge in this field, adequate additional justification for the publication is immediately apparent.

The author has discussed the anatomy and physiology of the several glands of internal secretion. He has outlined the rôle and importance of these glands in normal and certain abnormal or diseased conditions which are produced solely or in part from dysfunctions of these glands. He clearly states the established relationships between the glands of internal secretion and reviews the newer observations in the field of glandular therapy.

At the close of each major division is a summary of the subject matter of the section, which will be of particular value where the work is used as a text for the teaching of medical students. Adequate well chosen illustrations are used and a generous bibliography to both American and foreign literature is offered.

R.R.S.

SYMPTOMS OF VISCERAL DISEASE

By Francis Marion Pottenger, M.D., professor of clinical medicine, University of Southern California. Fifth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$5.00.

Dr. Pottenger has attempted to explain the various symptoms and physical signs which occur, based upon changes in the vegetative nervous system. The book bears the inscription, "There is the patient who has the disease as well as the disease which has the patient," and the author has completed a very thorough monograph explaining symptoms which may arise from a certain localized lesion, these symptoms being sometimes far removed anatomically from the point of primary involvement. The first section of the book is devoted to an introduction in which he relates the evolution of modern medicine, and the necessity of a new viewpoint in clinical medicine, mentioning the clinical conditions and psychic activity which maintain body control.

Part I is given over to a discussion of the vegetative nervous system, and relates in great detail what is known of the anatomy, location and functions of vegetative centers, and the physiology of the system as a whole, as well as its localized segments. The various theories of nerve control and impulses are taken up, and the anatomic and physiologic bases for the explanation of symptoms due to pathology are laid down. Part II of the book discusses the relationship between the vegetative nervous system and the symptoms of visceral disease, and explains in minute detail the conditions underlying visceral reflexes, the explanation of complex reflexes, and the

segmental relationship between the sensory and motor neurons in the central nervous system. The subjects of visceral pain and sensibility of different tissues are fully covered, since the last chapter in this part describes the sympathetic and parasympathetic syndrome as evidenced in the various pathologic conditions, such as infection, shock, high blood pressure, etc. Part III deals with innervation of important viscera, with a clinical study of the more important viscerogenic reflexes. In this part each of the vital organs are taken up in order; the innervation is given, and the various sympathetic and parasympathetic reflexes are named.

Many illustrations, including diagrammatic drawings of neurosegmental anatomy, are included in the book, and these help considerably in clarifying the text. The book is a very well organized discussion, which attempts to explain all symptoms on a neuro-anatomic basis. The reviewer feels that Dr. Pottinger is to be congratulated in his thorough and meticulous presentation of the subject. J.C.P.

INTERNAL MEDICINE—ITS THEORY AND PRACTICE

Edited by John H. Musser, M.D., professor of medicine, Tulane University of Louisiana, School of Medicine. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.

This is the third edition of the popular volume edited by Dr. Musser, the second edition having appeared in 1934. In several of the subjects, of course, there is no particular new information, but revisions have been made in those subjects in which the most progress has been evident during the past four years. The new information on pneumonia, on treatment of streptococcal infection and on diseases of the heart, has been incorporated in the new edition. Additional knowledge on nutrition, diabetes and the endocrine disturbances has been added, as well as many revisions of other subjects.

The contributors to the volume are very well known and their articles, while necessarily somewhat brief as would be expected in a text of this type, have not sacrificed any essential information. It is an ideal textbook for the student or busy internist.

J.C.P.

THE NEW INTERNATIONAL CLINICS: VOLUME III. NEW SERIES ONE

Edited by George Morris Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1938.

This volume of the New International Clinics is filled with excellent articles on a wide variety of medical subjects. The article by Russell M. Wilder on Recent Clinical and Experimental Observations in Adrenal Insufficiency is a classic and comprises a presentation of the new methods of treatment, the diagnosis of Addison's Disease, biochemic and physiologic studies and successful homeografts of adrenal cortex. George Cheever Shattuck of Philadelphia,

in a paper on Landry's Paralysis, attributes this condition to Vitamin B₁ deficiency. Ludy and Shirazy present an excellent paper on Fistulae of the Lip. A Symposium on the Uses of Sulfanilamide by a group from Baylor University is a valuable contribution. In the treatment of pneumonia the authors administer an initial dose of 120 grams of sulfanilamide intravenously, and 20 to 25 grains by mouth every four hours. Brooks of New Orleans describes the Use of Deuteroproteose in the Treatment of Pneumonia, but he fails to report the results of this method of therapy.

It is impossible properly to review such a vast amount of material. With each additional volume one is more impressed with the value of this series.

D.H.K.

A SYNOPSIS OF THE DIAGNOSIS OF THE ACUTE SURGICAL DISEASES OF THE ABDOMEN

By John A. Hardy, M.D., El Paso, Texas, Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.

This treatise begins with a valuable chapter on surface anatomy and familiarizes the reader with the possibilities of pathology in certain locations within the abdomen. The author then stresses the value of complete and careful examination, emphasizing inspection, auscultation, percussion, palpation and aspiration of abdominal contents for material which may be suspected within the abdominal cavity. The various acute conditions of the abdomen are briefly considered and, as far as your reviewer can determine, none has escaped the author's attention. The cardinal symptoms are enumerated and the clinical and laboratory findings are systematically described. The differential diagnosis is considered briefly but completely.

This reader is of the opinion that the author recommends aspiration in a greater number of cases than is advisable or necessary for diagnostic precision. The book is well written and is a desirable edition for a concise summary of acute abdominal possibilities from a diagnostic point of view.

L.D.P.

YOU CAN SLEEP WELL

By Edmund Jacobson, M.D., Chicago. Whittlesey House, McGraw-Hill Book Company, Inc., 330 West 42nd, New York, 1938. Price, \$2.00.

The author devotes many pages to a discussion of the various causes of insomnia and methods of overcoming it. His own belief is that the majority of sleepless people can overcome their wakefulness by systematically training themselves to produce general muscular relaxation. There is much of value in the author's suggestions, even though he pays relatively little attention to the unnatural stimuli of physical origin which are so frequently the cause of sleeplessness. The subject matter of the book will be helpful and harmless to those who read it.

F.A.E.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE

Edited by Philip Bard, M.D., professor of physiology, Johns Hopkins University, School of Medicine. Eighth edition. The C. V. Mosby Company, St. Louis, 1938. Price, \$8.50.

This is the eighth edition of this classic text edited by Philip Bard with the collaboration of seven other eminent authorities in various fields of physiology. The material is classified into nine parts. The neuromuscular and central nervous system, the special senses, the circulation, the respiration, the physiology of the alimentary tract, metabolism and nutrition, the endocrine glands, the distribution and regulation of water in the body, and the kidney.

In reading this excellent text, one is impressed with the changing order of things and the advance in knowledge during the last decade. To the physician, the book is particularly valuable, for it not only presents the physiologic basis of medicine, but correlates physiology and disturbed function as it is seen in clinical practice. Regardless of the physician's special field of endeavor, he can learn much from this text. He will acquire a better foundation in the basic principles of medicine, and receive many valuable suggestions from a didactic point of view.

D.H.K.

A TEXTBOOK OF OPHTHALMOLOGY

By Sanford R. Gifford, M.D., professor of ophthalmology, Northwestern University Medical School, Chicago. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$4.00.

This book is written entirely for medical students and general practitioners. It covers only the more common eye conditions, and simply and comprehensively explains many of the things which are ordinarily confusing to one not familiar with eye physiology and histology. No attempt is made for a detailed discussion, and only the usual symptoms and clinical pictures are described. It is easily read and is a good presentation of the superficial facts of ophthalmology.

J.H.M.

PRACTICAL OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY

By Adam Edward Schlanser, M.D., colonel, Medical Corps, United States Army. Illustrated. Lea and Febiger, Philadelphia, 1938. Price, \$4.50.

This little volume lives up to the claim made in its title and preface. It is the most complete, clear and concise exposition of clinical otorhinolaryngology that it has been the lot of the reviewer to read. One is astounded on reconsidering this work to find that all essentials of diagnosis, pathology and treatment, whether medical or surgical, of all conditions pertaining to this important field, have been presented without unnecessary words but in clear and readable form.

The author presumes that the reader has already had the basic training necessary to avail himself of a purely clinical treatise, and omits anatomy and physiology, giving only the symptomatology and pathology absolutely necessary for attaining a diagnosis and advising a treatment. Similarly in the consideration of each pathologic entity he omits unnecessary enumeration of surgical technic and only presents those methods of treatment (usually one in each case) which have proved the most satisfactory in his experience. The description of the surgical procedures is simple, understandable and complete. The same may be said in the case of the medical treatments. One must expect no revolutionary novelties from this book, but one will find information based on proved and universally accepted authorities.

The work is undoubtedly of greater value to the general practitioner faced with the occasional necessity for doing specialized work, than for the established and trained otorhinologist, but it is a welcome addition to anyone's library.

W.A.K.

PSYCHIATRIC NURSING

By William S. Sadler, M.D., chief psychiatrist and director, The Chicago Institute of Research and Diagnosis. The C. V. Mosby Company, St. Louis. Price, \$2.75.

With the increased opportunities and requirements for psychiatric nursing in mind the authors have here successfully attempted an ambitious presentation of information necessary for this type of nursing practice. The subject is presented in clear, concise form and the approach is in full conformity with modern theory and practice. Probably the most enlightening chapters are those devoted to a consideration of psychopathology under such headings as Medical Psychology, Mental Mechanisms, Theory of the Subconscious and the Causes and Symptoms of Nervous and Mental Disorders. The section on the neuroses is particularly satisfying since it discusses in detail not only the major neuroses but the minor neuroses as well, and stresses the psychogenic origin of neuroses in general.

The psychoses are wisely classified according to the easily understood reaction type grouping of Adolph Meyer. They are adequately discussed under such headings as etiology, symptoms, types, prognoses and the physical and psychiatric nursing problems peculiar to each. Under the heading of psychotherapeutics are found additional directions for the care and control of nervous and mental patients, including chapters on physiotherapy and psychotherapy, advice on how to combat many of the more common neurotic complaints and a pointed discussion of the nurse's own psychology and personality.

The nurse who masters this text will be impressed with the tremendous scope and possibilities of psychiatric nursing and will gain an understanding as well as a scientific attitude toward nervous patients.

R.C.D.

The JOURNAL

of the

Iowa State Medical Society

VOL. XXVIII

DES MOINES, DECEMBER, 1938

No. 12

THE PRESENT STATUS OF FEVER THERAPY*

LYNN T. HALL, M.D.

Associate Professor of Medicine
College of Medicine, University of Nebraska
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Heat, applied locally and generally, has been used in the treatment of disease since the days of Hippocrates. The significance of fever and whether its incidence should be viewed with alarm or welcome have not been well understood until recently. Those physicians who were graduated fifteen or more years ago will recall the section on antipyretic drugs which appeared in every textbook of therapeutics. Fever then was regarded as undesirable. Virchow taught that there were many changes constantly found in tissues secondary to fever. Thus, fever was regarded as an undesirable process and the enemy of man. During recent years much scientific evidence has accumulated, indicating that elevated body temperature is a valuable aid in resisting disease; basal metabolism is increased, blood circulation velocity is accelerated, a measurable stimulative effect of formation of immune bodies and leukocytosis is noted; diminution in the potency of toxins occurs and there is inhibition in the growth of certain bacteria.

In view of these and many other considerations which include biochemical events assumed to result from the presence of fever, the rôle of this phenomenon in the course of disease is not regarded as an undesirable symptom but rather a condition so desirable that it is actually induced. These observations and arguments have been, no doubt, responsible in part at least for the experiments with artificially induced fever. The first report of the therapeutic use of fever was made by Julius Wagner Von Jauregg in 1891. He gave tuberculin to patients suffering from general pare-

sis. Some improvement was noted but relapses followed. No basic differences were seen after vaccines were used. A marked change came to general recognition and acceptance with the use of a real infectious disease, that is, malaria. While some felt that the benefits resulted from the high temperature level alone, others regarded fever as an index of the intensity of the therapeutic process running through the organism. Some observers still claim a biochemical or biologic advantage from the induction of fever produced by an agent belonging to the disease group, or a foreign protein. Specific and nonspecific proteins as well as specific disease organisms produce fever. The effects, however, are not always as good as fever artificially induced and are never as readily controlled.

What there is to fever to make it effective has been much studied. Many means of inducing fever have been brought forward with advantages claimed for each. From the most primitive of these means to the most elaborate of cabinets and electrically operated devices of the present day, good results have been obtained in experienced hands. Hot baths elevate the temperature, and are satisfactory for temperatures to 104 degrees F. for an hour or two, but for longer and higher fever they are too debilitating, irritating, and macerating to the skin. Hot blankets, wrung out of hot water and wrapped about the patient, are effective in the same degree. Electric blankets act similarly and all have the advantage of being very inexpensive. Radiant light cabinets have the objection that elevation of temperature is slow and control of humidity is lacking.

From the accumulated evidence, most clinicians interested in this form of therapy have agreed that fever, not the agent, is the important factor. The device or apparatus inducing fever the most quickly, elevating it higher, maintaining it longer and more evenly, and terminating it quickly and safely is the one of choice. As judged by these criteria the Kettering hypertherm seems to be the

*Read at Meeting of the Staff of Iowa Methodist Hospital, Des Moines, Iowa, September 11, 1938.

most effective apparatus used thus far. It does not involve the use of contact electrodes, plates, or other electrical appliances. The mechanism consists of a simple air heater with a simple means of humidifying the air to any degree and keeping it in motion. The cabinet itself is insulated and made with fine workmanship. However simple the apparatus and the means of induction may seem, the therapy of fever should never be an office maneuver. The treatment should be conducted in a hospital by specially trained nurse technicians and resident hospital physicians who are not allowed to leave the patient during the administration. In the hands of skilled technicians and with all safeguards provided for the patient, there have been few complications from fever produced by physical means. Careful studies of the patient by complete physical and laboratory examinations before treatment is instituted will greatly reduce or entirely avoid complications. With various means of induction, however, the following complications have been reported: skin burns, facial herpes, corneal herpes, heat stroke, cerebral edema, hemorrhage, tetany and convulsions. In a recent report of the Council of Physical Therapy of the American Medical Association of 4,809 patients treated by thirty-four physicians, there were only twenty-nine deaths.

The views expressed here are largely those of the Committee on Fever Therapy, of the University of Nebraska, College of Medicine. To date more than 4,000 treatments upon more than 1,000 patients have been given by the personnel of this committee. The apparatus used has been the Kettering hypertherm. Four cabinets are now employed almost daily in a special department of the Bishop Clarkson Memorial Hospital in Omaha. From the work of the committee and its members, certain points of interest relating to physiologic changes, indications and contraindications, and variations of fever used have been formulated and are now generally accepted. It is to these present concepts that I wish to invite your attention.

PHYSIOLOGIC CHANGES

The use of local heat as a therapeutic agent has been an accepted form of treatment since antiquity. Applied for the relief of pain and for the promotion of added circulation to local inflammatory areas, there has been universal agreement. More recently, gynecologists and surgeons have found new means of applying heat to the surface and cavities of the body, with accompanying beneficial results. These experiments have made the use of generalized temperature

elevation seem rational and effective. This treatment has been tried with good effect by Bennett¹ and others.

Pulse: Fever causes the pulse to become more rapid and usually to parallel the curve of the temperature. The increase is rapid at first but later becomes slower. The usual rate varies from 120 to 140 beats per minute during the treatment. A rate constantly higher than 160 is regarded as an indication for termination of the treatment. If it rises to 160 beats per minute on a second occasion, the treatment is discontinued.

Velocity: An increase in the velocity of the blood from 40 to 50 per cent has been noted. The superficial capillaries, venules and veins were found to be dilated, and Bazett² found the blood flow more rapid. This increased blood flow may be a potent factor in bringing about the beneficial effects of fever therapy.

Blood Pressure: With the onset of fever there is a marked dilatation of blood vessels and a coincident fall in pressure after the first hour. Due to the increasing improvement in technic, including the giving of adequate fluids and salts, there is less change than formerly. Systolic pressure at first rises, then drops to below the normal mark at the end of the treatment. The diastolic pressure goes in the opposite direction.

Electrocardiogram: The changes in normal persons are very slight. When noted, they consist of transient flattening or actual inversions of the T wave. Cheer³ has pointed out first, that the sino-auricular node is very resistant to the effects of high temperature and remains the pacemaker until very near the end; and second, that ultimately auriculoventricular block and various types of ventricular rhythm develop.

Gastric Secretion: The normal secretion is usually diminished during a session of hyperpyrexia. During a prolonged session, there may be a 40 milligram per 100 cubic centimeters decline in the blood chlorides. Loss of chlorides is reflected in a complete loss of hydrochloric acid in the stomach. Nausea, vomiting and cramps appear if the loss is too rapid.

Water Balance: Very large amounts of water are lost during a session of fever. Four to five thousand cubic centimeters escape by perspiration.

Basal Metabolic Rate: The basal rate is elevated and most uniformly. The increase takes place in orderly fashion at the rate of seven or eight per cent per degree rise in temperature.

Blood Changes: The viscosity and blood volume are little, if any, changed. The red blood

count is not appreciably changed by fever. Platelets are thought to be increased. White blood cells are markedly increased. The increase is out of proportion to the red cells, indicating that the increase is not due to dehydration. The polymorphonuclear cells are increased, the young forms especially. The lymphocytes are decreased and the sedimentation time of the blood is decreased. Chemical changes include a slight increase of urea nitrogen, but no change with uric acid; a slight rise in creatinine, and an increase in blood sugar, with no glycosuria. Blood calcium and phosphorus are little changed. There is a great loss in blood chlorides. Also, there is a loss of carbon dioxide from the blood stream.

Respiration: Along with other signs of increased metabolism, respiration is stimulated. An individual subject to hyperthermia appears to need more oxygen for life and well being than the normal person.

With the use of malaria, there is anemia with diminution of both red and white cells.⁴ Studies concerned with the thermal death point of certain bacteria have been made. The *Spirochaeta pallida* of syphilis, the gonococcus in gonorrhea and the meningococcus of chronic meningococcal infections may be killed by prolonged temperatures above 105 degrees F. Studies of other pathogenic organisms have shown their thermal death points to be far above the zone which can be withstood by the human body, (107 degrees F.). Tuberculosis is a member of this group. Low temperatures, from 103 degrees F. to 105 degrees F., attempting to stimulate metabolic, chemical and immunologic processes, have been employed in the treatment of multiple sclerosis, chronic arthritis, neuritis, chorea and asthma, undulant fever, ulcerative colitis, arterial hypertension and angina pectoris.

DISEASES IMPROVED BY FEVER THERAPY

Gonorrheal Infections: Most of the cases of acute and chronic gonorrheal infections, some with various complications, are improved by fever therapy. The work of Carpenter, Boak and Warren⁵ establishing the thermal death rate of most strains of gonococci at 106.8 degrees F. made the value of fever therapy most apparent. Treatments of six or more hours of fever at 106 degrees F. every three days until the symptoms and laboratory findings are negative have been given. Four sessions have generally been sufficient. Recently, through careful preparation with fluids and glucose, it has been possible to cure patients with acute urethritis with one treatment of ten hours' duration at 106 degrees to 107

degrees F. Treatment of chronic urethritis, chronic urethritis with prostatitis, salpingitis and gonococcal arthritis has given results which may be tabulated as: cured, 30 to 50 per cent; improved, nearly all of the others. Ophthalmia in gonorrhea is also successfully treated. Although the advent of sulfanilamide in the treatment of acute gonococcal urethritis has proved to have many advantages, our committee has treated a small number of sulfanilamide resistant cases successfully with fever therapy. The best results seem to be in the treatment of complications such as epididymitis and arthritis. Gonococcal complications are so successfully treated by fever therapy that many former surgical indications no longer obtain.

Syphilitic Infections: The organism of this disease is also capable of destruction at temperatures which the human body may withstand.⁶ The treatment of acute syphilis by fever therapy and chemotherapy combined has seemed to be a marked improvement over the long two or three year course usually employed. Late cases of syphilis, many resistant seropositive, the so-called Wassermann fast blood and spinal fluid types, dementia paralytica, tabes and meningovascular types have been observed. Resistant cases were given combined fever therapy and chemotherapy, and a reversal to negative was noted in most cases. Paresis treated by this method has been reported by Bennett⁷, and others. The results are encouraging. They show complete remissions with ability to resume former occupations in 60 to 70 per cent. As compared with malarial therapy, one could safely and fairly make the assertion that the results are as good. The treatment is much safer, has a shorter course and is less expensive. Many patients may be treated as outpatients. This cannot be done when malaria is used. Also, in the treatment of tabes, this method seems to excel any other thus far employed by the medical profession. The tabetic pains in the legs, gastric crises, ataxia, control of bladder, vertigo and headache have been relieved or totally eliminated in many. We have seen dramatic responses of relief from this disease accompany fever treatment.

Meningococcal Infections: These react to fever much as do those due to gonorrhea. Thermal death studies by Bennett⁸ (106 to 107 degrees F. in eight hours), suggested the application of fever therapy to this disease. The committee has seen three patients with chronic meningococcemia, previously treated for long periods by various means including serum, recover promptly after two heatings. It is recommended that fever be

tried in the subacute or chronic cases where serum does not seem to be effective. In the acute fulminating types, fever is contraindicated.

Undulant Fever: Marked symptomatic relief has been noted following fever therapy, particularly in those patients suffering from arthritis. If the use of sulfanilamide proves as successful as indicated by the reports of Hall and Dunlap,⁹ and others, it is not likely that fever will be employed, although it has proved helpful.

Sinusitis: Influenza, poliomyelitis and other diseases belonging to the group caused by viruses may subsequently prove to be helped by this method. No results are thus far conclusive. They are, however, suggestive.

The Arthritides: 1. In acute rheumatic fever it has been shown rather conclusively by members of our committee¹⁰ that artificial fever is most effective in the control of joint pain. Patients tolerate the fever well. There is much to suggest that this form of treatment will shorten the course of the disease and prevent its recurrences and consequently the development of carditis. Dunn and Simmons¹¹ have recently reported on this subject, with these conclusions. Others, including Sutton and Dodge,¹² have reported similar results. Rheumatism has a marked tendency to subside spontaneously, but the persistence of low grade subclinical infection with periodic clinical evidences of infection has been pointed out by Bland and Jones.¹³ While sedimentation rates become normal after fever, longer periods of study are necessary and leukocyte counts should be made to determine finally if they are evidences of protracted immunity. 2. In gonorrheal arthritis from a series observed by our committee and from the work of others, treatment with fever therapy may be expected to produce about 80 per cent cured or at least markedly improved cases. A minimum of twenty-five hours with four to six treatments has been necessary. The advantage over other forms of treatment seems to consist mainly of the marked shortening of the disability. The dependability also seems most noteworthy as reported by Owens.¹⁴ 3. In chronic atrophic infectious arthritis the relief from pain noted in the treatment of rheumatic arthritis is also observed in treatment of this group. Along with other forms of treatment so essential to the proper management of this form of arthritis, fever therapy seems to be a valuable adjunct. Short periods of low temperature appear to be adequate. All forms of heat appear to be helpful, but artificial fever is followed by the greater number of desirable responses. 4. In hypertrophic arthritis fever therapy has proved

to be most disappointing in the management. While favorable results have been obtained, they are nearly always transient and followed by recurrence of symptoms. The best results have seemed to be associated with those cases which have an infectious element present. 5. Periarticular, muscular, fibrous and neuritic¹ inflammations have been markedly improved by artificial fever. Sciatic and brachial forms of neuritis, herpes zoster, various forms of root pains and intercostal neuralgias have been markedly relieved. The need for analgesic drugs for the control of pain in the patients has been materially lessened.

Infectious Chorea: Rather encouraging reports have appeared in the literature attesting to the success of fever treatment of this disease. The carditis has not seemed to be a contraindication if present. Whether fever is induced by foreign proteins or by other means, the results have been parallel.^{12 and 15}

Ocular Diseases: The complications resulting from syphilitic infection such as interstitial keratitis, uveitis, optic neuritis and choroiditis have been much benefited by combined fever and chemotherapy.¹⁶ Gonorrheal ophthalmia has already been referred to as responding favorably.

Toxic Infectious Psychoses: A number of such cases have been treated by our group. The usual treatment time was shortened and the general response was so striking that further employment of fever therapy in these disorders is recommended. Several sessions of fever reaching 105 degrees were used.

Multiple Sclerosis: It is not likely that fever produced by any means stops the progression of this disease.¹⁷

Lung Diseases: 1. In bronchiectasis general improvement usually follows the use of fever therapy. The amount of sputum becomes less, increase in weight and general improvement in health occur. Reports have shown reduction in the size of cavities and lesions have coalesced and become smaller. 2. In intractable asthma a number of favorable responses have been noted in patients who have not been able to obtain relief from any other form of therapy. While no cures have been observed,¹⁸ occasional sufferers have experienced long remissions of paroxysms. Short treatments at low temperatures once a month suffice.

Malignant Tumors: Evidence is accumulating which suggests that fever therapy does modify the advance of the usual pathologic processes. Simpson¹⁹ states: "Medical literature contains something over fifty records of cases of malig-

nant disease which spontaneously regressed and in some cases were apparently cured following febrile disease, such as erysipelas, typhoid fever, pneumonia, or malaria. This was particularly true in cases of sarcoma. There is at least this much evidence to encourage other workers to explore this field, particularly as an adjunct to radiation therapy." Warren²⁰ and Doub²¹ have also reported on this subject.

Kidney Disease: While inflammatory disease of the kidney is regarded as a contraindication to fever therapy, nephroses have been reported materially improved following the use of pyretotherapy. Clement²² collected thirty-nine cases in which an existing nephrosis was improved after an intercurrent febrile disease. The detailed manner of initiating the fever disclosed that injections of oil and later antityphoid vaccine inoculations were employed. The results were similar to those observed following febrile disease.

CONCLUSIONS

While fever therapy seems to be effective in the management of the diseases discussed, its use is disappointing in the treatment of such diseases as subacute bacterial endocarditis, tuberculosis, mycosis fungoides, epidemic encephalitis, scleroderma, Hodgkin's disease and arteriosclerosis. It is not unlikely that interesting as well as favorable results will follow attempts to treat diseases other than those of the infectious group. Metabolic disorders, blood dyscrasias, parasitic infections, tropical diseases, all forms of neoplastic growths and even leprosy may yield to some form of fever. One might safely hazard the prediction that combined fever and chemotherapy will soon be the accepted treatment for primary syphilis. In view of the vasodilation noted, its use for arterial hypertension or angina pectoris is suggested. This new form of treatment, so striking in many particulars, will no doubt prove to be effective in many diseases as yet not studied. Further intensive effort, guided by physiologic and biochemical research, is needed to point out the fields of usefulness. Careful selection and good judgment are essential.

In closing, may I quote from Hippocrates: "Those diseases which medicines do not cure, iron (the knife) cures; those which iron cannot cure, fire cures; and those which fire cannot cure are to be reckoned wholly incurable."

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TREATMENT OF INFECTIONS OF THE FACE AND NECK*

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Treatment of infections of the nose, upper lip, face, forehead and neck, differs from the treatment of other infected areas because of the anatomy of these parts. Here there is increased danger of pyemia, septicemia, meningitis, embolism and sinus thrombosis. In these areas bacteria readily enter the facial veins, which have no valves, and pass on into the cavernous sinuses or even into the internal jugular vein. The serious nature of these infections was recognized years ago and minutely described, particularly in regard to serious complications.

In reviewing the literature of this subject one is impressed with the differences of opinion of dermatologists and surgeons; naturally the earlier cases would be seen by the dermatologist and the more serious by the surgeon or in the surgical clinic. Dermatologists employ conservative methods, that is, x-ray, vaccines, bactericides and topical applications, while the surgeons are inclined

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

to use more radical measures such as crucial incision or excision. Of course I have reference to furuncles and carbuncles which are the most common of infections. However, at the present writing it is generally agreed by all who are called upon to treat such lesions that the more conservative plan of treatment of the early and benign infections of the face and neck should not be a traumatizing one. The temptation to squeeze these early infections such as pimples and boils easily leads to a spread of infection. While it is next to impossible to standardize or outline treatment in the general run of infections of face and neck, one can divide the degrees of infection into three stages for the sake of simplification. The infected process may be seen in; first, the initial lesion; second, the period of extension; and third, the period of embolism, pyemia, and septicemia.

First stage: The initial lesion is usually confined to hair follicles, abrasions, sweat glands, or minor lacerated wounds. It appears red and superficial, slightly swollen and edematous and may become hard and tender for twenty-four hours. During the next twenty-four hours it may appear necrotic and a yellowish color may appear beneath the epithelium. Treatment of this stage consists mostly of "don'ts." One should not squeeze, pick or cut. A swab of freshly prepared tincture of iodine, a little merthiolate or mercurochrome applied at frequent intervals will suffice. After twenty-four to thirty-six hours, the necrotic area may be opened with safety and mild applications may be applied until resolution has taken place.

Second stage: The period of extension appears when localization fails. Within several hours the infection invades the neighboring structures, cellulitis or carbuncles are developing, the tissue is swollen, edematous and infiltrated, and the pain increases. If the infection is on a lip it becomes three times the normal size. The tissues there are hard, purplish in color and very tender. At this stage one is tempted to incise and, on finding no pus, to squeeze tissues or to probe. This procedure not only fails to give relief but causes a further rapid spreading of infection and frequently results in a fatal thrombophlebitis or septicemia. The treatment of the second stage is suggested constitutional: resistance of the patient should be reinforced by feeding and stimulation. Local measures will insure rest, sleep, drainage and freedom from pain. During the first few days the advanced necrotic points are kept open, compresses of salt solution or boric acid are applied every few hours and are kept saturated with a medicine dropper. Large heavy compresses should

be avoided because their weight interferes with the superficial circulation and also because they are painful. Dressings can be kept fairly warm with the aid of an electric heater or lamp suspended over the necrotic area. After the above mentioned treatment the area becomes localized and the stage of liquefaction has advanced. Small multiple incisions to connect the more necrotic areas may then be made toward the center. Small moist antiseptic compresses are continued until healing has occurred. By this method of delayed interference, we confine our surgery to a walled off zone, and avoid cutting into veins that are not blocked, thereby lessening the chances of the more serious complications.

Third stage: If the patient is seen for the first time in the third stage of the process of extension complicated with thrombosis, meningitis, septicemia, etc., the treatment in all probability will be hopeless. The patient's picture in this stage is a sad one with delirium, lips greatly swollen, face and neck edematous, and eyes closed. I have tried every supportive measure from protonsil to transfusions without the slightest recession in disease.

Much has been written about the more radical procedures of treatment such as ligation or cauterization of the angular vein to prevent infection in the cavernous sinus. Personally, I believe the conservative measures are still best. The theoretic correctness of the radical procedure is rather doubtful; I have never seen an early case in which I thought the procedure was indicated, or a late case in which I thought it would be beneficial, because when it has reached this stage the physician's chief duty is to permit the patient to arrange his worldly affairs before the onset of coma.

I am informed by a few of my roentgenologist friends that some excellent work has been accomplished by irradiation which they claim appears capable of aborting more specific infections such as carbuncle, cellulitis and erysipelas. The roentgen rays are not bactericidal in their action, but promote the breaking down of the cells and liberating powerful antitoxic substances.

The selection of anesthesia in these infected areas is always a matter of individual judgment. In small areas phenol applications, gas anesthesia, amytal or morphine may be used successfully; never local infiltration.

Our progress in the treatment of infections of the neck has improved with our more modern conception of anatomy and fascial layers or tissues of the neck, for they constitute incline planes and pockets along which infections may and do travel or extend. Briefly, there are three main

fascial layers; prevertebral, pretracheal, and one completely surrounding the neck. The three fascial layers join and form the carotid sheath for the nerve and vascular bundle. Infections found in these areas are invariably the result of extensions from the upper air passages and floor of the mouth. With this knowledge it may be possible to anticipate the course of infection when and if the cervical region becomes invaded. It also gives us valuable information as to whether the treatment should be surgical or medical. Mosher states: "The greatest single cause of neck infections is in or about the tonsil, second in frequency is the pharynx, of the three potential areas most susceptible to abscess or infection."

The first lies behind the nasopharynx and in front of the vertebral column, extending from the base of the skull to the mediastinum. An abscess within this area is called retropharyngeal. The second area lies in the floor of the mouth and an abscess here is referred to as Ludwig's angina. The third area is lateral to the pharynx between the pharynx and the inner surface of the lower jaw, extending from the base of the skull to the angles of the jaw. An abscess in this area is referred to as pharyngomaxillary. The fourth area is along the carotid sheath. There are, of course superficial infections of the neck which we readily recognize as boils that do not attack the lymph nodes with which we are all familiar, but when the infection invades the glands or nodes it gives some clue as to the origin of the infecting process. For example, lymphadenitis of the submental or submaxillary region usually denotes diseased teeth, while a more superficial adenitis in the posterior triangle may mean drainage of a scalp infection. Let me then enumerate the more common infections of the neck in the order of their frequency: peritonsillar abscess, retropharyngeal abscess, pharyngeal maxillary abscess, retro-esophageal abscess, and cellulitis of the neck. In my many years of practice I have my first retro-esophageal abscess or infection to see. When you consider the trauma to which this delicate esophageal tube is subjected, such as penetrating foreign bodies, open pins, partial plates, escharotics and infected diverticula, it is surprising that there are not more frequent occurrences of infection in this retro-esophageal area.

While I have intentionally avoided going into descriptive detail of the treatment of the individual infections found in the above-mentioned areas, there is one serious infection of the neck which we do not hear of or read about in the more recent literature, the condition described by Ludwig and which has been given the special name

of Ludwig's angina. I saw and operated upon two of these patients early in my practice with excellent results and it is quite singular that I have not seen a case since that time or heard any of my colleagues speak of seeing a case in years. Ludwig's angina is a violent gangrenous inflammation of the tissues of the submaxillary triangle of the neck, characterized by severe septic symptoms, the formation of a hard, tense, brawny swelling with great pain, difficulty of speaking and swallowing accompanied by cyanosis and dyspnea from swelling and edema of the throat. It frequently follows stomatitis, infections from devitalized infected teeth, periostitis of lower jaw and streptococcic infections in the mouth in general. If this infection is not relieved by early incisions the side of the neck becomes a deep mahogany and the suppurative process tends to burrow down toward the mediastinum. It is originally a streptococcus infection and if local abscesses appear, it is frequently mixed with staphylococcus. To relieve this infection it is well to approach it through an incision in the maxillary triangle, using the knife in the skin only and blunt dissection thereafter. Some authors have recently recommended sulfanilamide in repeated doses for the treatment of Ludwig's angina. However, it has no particular antitoxic action and does not replace streptococcic antitoxin, the results of which have not been specific.

One is tempted to remark on the infrequency of infections of the neck during recent years as compared to the ten years just preceding our entrance into the World War. This improvement has undoubtedly been due to the cooperation of the internist, the surgeon and the dentist, which has strikingly reduced occurrences as well as mortality rates resulting from serious neck infections. Prophylactic factors should also be given due credit. About 1910 the literature was alive with articles on focal infections. In this same year Hunter, of England, in an address given in this country charged the dental profession with contributing to many of the systemic ills of the public through unsanitary dental restorations. At that time he did not refer especially to devitalized teeth, but to general unsanitary conditions existing around most crowns and bridges. Shortly thereafter the dental x-ray was so perfected that it brought out the importance of devitalized teeth, apical infection and absorptions from pulpless teeth as causative factors in infections. Cultures from these oral foci have been definitely proved in many systemic diseases.

What has become of the numerous cases of tuberculous glands of the neck and resulting ab-

scesses which we were so often called upon to treat? It is true they are not so common in rural communities, but let us not forget what pasteurization of milk, now so universally adopted, has done for us. The isolation management of the tuberculous patient from his contacts surely has been the secret of success in this field.

A not uncommon error is the mistaken diagnosis of branchiogenetic cysts. They are frequently mistaken for cold abscesses appearing in the neck and above the level of the hyoid bone. A very interesting contribution on cysts of the neck was written by Nicholas Senn. He referred particularly to a group of cystic tumors which originate from congenital defects of development and stated that they have been variously designated as branchial cysts. He personally favored the term because it seemed to express more appropriately both the location and character of the tumor, the word branchial of Greek origin meaning gills. While there is much merit to the critical analysis of the true embryologic origin, nevertheless, it seems that one might use the term branchiogenetic cysts assuming that in a broad sense this could convey the general site of origin. Frequently then these cyst masses appear both in front of and posterior to the sternocleidomastoid, springing up into a sudden swelling after remaining dormant for years. The size and location make them painful and the surface of the skin over them is red and angry looking and has the appearance of well defined abscesses. The treatment therefore depends upon a correct diagnosis. If one is contemplating the drainage or removal of such a mass appearing at the angle formed by the sternocleidomastoid and the angle of the inferior maxilla, simple aspiration may save some serious embarrassment. The aspirated contents will undoubtedly contain cholesterol crystals and have the gross appearance of a turbid, muddy, stringy fluid resembling pus, or a section taken from such a wall will show stratified squamous epithelium, thereby establishing the diagnosis of branchiogenetic cyst. If, after the aspiration of the contents one still doubts whether the infection is a tuberculous cold abscess or a congenital cyst, animal inoculation may be done.

SUMMARY

1. The most common swellings of the neck are due to infected glands.
2. Infections are deep or superficial.
3. Infections should not be confused with the various types of congenital cysts or the occasional appearance of aneurysm.
4. Treatment depends much upon the etiology and the surgical anatomy of the parts involved.

5. We must remember that adequate drainage can usually be obtained through the external route and if internal drainage has been established and does not bring about immediate relief, external drainage should be established without delay.

6. In most circumscribed infections of the neck, the use of the knife is limited except through the skin, and blunt dissections should be resorted to in the very earliest part of the operation.

7. Treatment depends much upon the etiology and surgical anatomy. A case of abscess of the neck well chosen and studied and skillfully operated upon should invariably do well. The success of treatment so far has been due to prophylactic measures rather than radical surgical interference.

8. Last, but not least, at the sacrifice of glory to the surgeon, let us give credit where credit is due.

THE INTERPRETATION OF UPPER ABDOMINAL PAIN*

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It is pain which brings most patients with intra-abdominal pathology to the doctor. It would seem to the unthinking or inexperienced practitioner, that a detailed knowledge of neuro-anatomy is quite sufficient for the diagnosis of abdominal disease. It would seem that it might be possible to divide the abdominal cavity into a number of water-tight compartments, and that pain or tenderness in each overlying area, should represent a definite disease. That this is not true is all very quickly appreciated. Dr. Charles Mayo has stated that, "when the character and site of an abdominal pain tells something to the surgeon it frequently does so, not because he knows so much about the underlying anatomy and physiology, but because he has noted that particular pain many times before, and he remembers what he found when he opened the abdomen."

A thorough knowledge of all experimental data along with clinical experience should enable practitioners more carefully to interpret pain in disease. In fact, it should enable them to anticipate and possibly to prevent the advance of surgical lesions. There are many accepted facts concerning abdominal pain upon which all agree. However, concerning the mechanism of parietal pain and its radiation, there is still much controversy.

The surgeon has repeatedly demonstrated the insensitive state of the greater part of the gastrointestinal tract. The stomach, gallbladder, and

* Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

intestine may be cut, crushed with clamps, or burned with a cautery, and yet the patients feel no pain. It is believed that these organs are not supplied with somatic sensory nerves. This does not hold good in the deeper or more posterior parts of the mesentery of the small intestine or in the transverse and pelvic mesocolon, which contain somatic nerves that are sensitive to the above stimuli. The solid intraperitoneal viscera do not give rise to pain, but tying, pulling, and clamping do produce pain in them.

There is no general agreement that the solid intraperitoneal viscera, namely the liver and the spleen, are capable of giving rise to true visceral pain. The hollow intraperitoneal viscera, in spite of their apparent insensitivity, give rise to visceral pain when subjected to adequate stimuli, and that stimulus is tension on the viscerosensory nerves in their walls. Visceral pain has certain definite features. It is deeply situated, and it is not referred to the superficial sensory nerves of the abdominal wall. It is very vaguely and imperfectly localized. The visceral pain from the stomach is indefinitely localized in the epigastrium; pain from the small intestine is in the umbilical region; and visceral pain from the colon is hypogastric in location.

It is evident to all that the visceral peritoneum is insensitive to pain, but that the parietal peritoneum is highly sensitive to it. This is especially true of the peritoneum beneath the diaphragm and that part lining the anterior abdominal wall. All have made this observation during operation under local anesthesia. Morley feels that these nerves should be likened, only as to their sensitivity to pain, to the sensory nerves of the cornea and conjunctiva. His observations, as well as others, show that they are far more sensitive than the nerves of the skin. The parietal peritoneum is extremely sensitive to chemical stimuli, such as gastric juice, blood clots, or bacterial toxins of a peritoneal inflammatory exudate.

The physiology is still obscure as to how pain is caused by the stimulation of the sensory nerves of the parietal peritoneum itself, but is projected or referred to more superficial nerves which are connected with the same spinal segments as those receiving the painful stimulus. Morley has operated upon patients under spinal anesthesia which rendered the anterior abdominal wall completely insensitive. He then passed a swab in contact with the under surface of the diaphragm. The phrenic nerves, derived from the third, fourth and fifth cervical segments of the cord, are not anesthetized in this procedure, so that the moment the swab comes in contact with the diaphragm, the patient

complains of a sharp pain. This pain is felt, not in the region of the diaphragm, but at the tip of the corresponding shoulder. This area receives its nerve supply from the third, fourth and fifth cervical segments. The skin over the tip of the shoulder is developmentally the dermatone of the diaphragm. Here then, Morley has been able to study with great ease, the projection of pain, and he has termed this, peritoneocutaneous radiation. Morley further feels that similar projections of pain from the anterior parietal peritoneum to the more superficial sensory nerves of the skin and subcutaneous tissue occur whenever the parietal peritoneum receives a powerful stimulus, as by contact with an acutely inflamed appendix. He feels that this can only be due to precisely the same mechanism of peritoneocutaneous radiation as occurs in the shoulder tip area. It is granted that the projection of pain from the parietal peritoneum to the appropriate superficial nerves does take place but the nervous pathway is by no means clear.

Carnett finds that he is unable to explain most of his cases of parietal pain and tenderness by Morley's theory. He has observed that acute parietal pain is not always caused by an acute intra-abdominal lesion; that extra-abdominal acute infections may produce acute parietal pain; that, frequently, acute intra-abdominal lesions may exist, without acute parietal pain, and, if pain does exist, it may manifest itself elsewhere. Further, he has observed that chronic parietal pain does not disappear on the removal of the intra-abdominal pathology. It is his contention that frequently, chronic as well as acute, parietal pain can be cleared up as well and sometimes better by removing the cause of the pain, which he contends most times is extra-abdominal. He feels that the origin of parietal pain in acute intra-abdominal infections is in an acute toxemia. The acute toxemia causes an intercostal neuralgia. His explanation of the failure of chronic parietal pain to disappear after the removal of the existing intra-abdominal lesion is that the extra-abdominal lesion causing neuralgia has not been removed. The frequent continuance of chronic parietal pain following necessary, and otherwise successful, operation may be explained by the presence of an extra-abdominal lesion causing neuralgia.

It is now proposed, to interpret the more common lesions which cause upper abdominal pain. Appendicitis in the majority of cases begins with a central pain in the region of the umbilicus or a little above it. It is thought that this pain is segmental in character. It is a dull heavy pain

described as a "belly ache." This early pain is purely visceral in character, and, as long as the process is within the appendix itself, it gives rise to no tenderness or rigidity. After a variable number of hours the pain becomes localized and is superficial in character. It is at this stage that there is stimulation of the parietal peritoneum and it is localized. Muscular rigidity and tenderness exist. The peritoneum is not necessarily stimulated by the inflamed appendix but by the bacterial toxins. Carnett feels that this is not true but that this pain is caused by an acute toxemia, which in turn causes neuralgia. If the appendix is retrocecal, the pain is localized from the onset, for there is from the onset contact with the sensitive parietal peritoneum. If the appendix is in the pelvis the pain may never be localized, because of the so-called non-demonstrated area of the abdominal wall which exists with the pelvic parietes. Appendicitis has been mentioned first because, if Deaver's rule is observed, one should in the presence of acute abdominal pain, think first, last and always of appendicitis.

Biliary colic and other types of pain in the biliary tract are poorly understood because biliary colic has been seen commonly in the absence of gall-stones, in the absence of a gallbladder and even in cases in which common ducts have been destroyed by scarring. Alvarez wonders if the pain might not be due to powerful muscular contractions of the pars pylorica of the stomach or in the first portion of the duodenum. He feels, however, that this is not possible, because irritation of these regions by ulcer produces a different type of pain with a different point of reference and different type of radiation. It is known that the gallbladder can be cut or crushed without pain. Sudden distention will produce some of the feelings of bloating and indigestion which occur in patients with cholecystitis, but usually not pain. The common duct is much more sensitive and distention here will produce pain, nausea, vomiting and difficulty in breathing, which is so characteristic of biliary colic. If Morley's interpretation of abdominal pain is correct then the central epigastric pain of biliary colic is visceral in origin and is no doubt due to powerful contractions of the muscular element in the walls of the bile duct, in an effort to force the obstructing stone into the duodenum. The associated right scapular pain is due to stimulation of the somatic sensory nerves in the posterior parietal peritoneum adjacent to the bile ducts, with peritoneocutaneous radiation of the pain to the back. If the attack lasts three or four hours, then the pain changes to the right hypo-

chondrium, immediately over the gallbladder. This is due to some congestion and inflammation of the gallbladder, sufficient to irritate the overlying parietal peritoneum.

In acute obstructive cholecystitis, the peritoneal element of pain is best seen. There is distention and acute inflammation of the gallbladder and this causes pain to last for several days. The persistence of pain, extreme tenderness and absence of jaundice are distinguishing features of this condition. There is marked rigidity and tenderness over the fundus of the gallbladder and if this condition persists for several days, it progresses downward so that if the condition is seen late, it may simulate appendicitis.

The pain of chronic peptic ulceration of the stomach and duodenum is still very little understood. It is unquestionably visceral in nature, but there is some doubt as to whether it arises as a result of muscular contractions of the stomach and duodenum in the presence of an ulcer, or whether it is due to the irritating action of the gastric juices upon the ulcer. It may be that both play a part. The most striking characteristic of peptic ulcer is its relation to food. In uncomplicated gastric ulcer, the pain which is of a boring character develops half an hour to one hour after a meal, but disappears before the next meal is taken. In duodenal ulcer, the pain, which is of a burning character, arises some two hours after meals and lasts until the next meal which itself gives relief. Localized tenderness, and in some cases increased resistance of the muscles, may be present during the active phase of an ulcer. Morley suggests that this is due to contact of the ulcer with sensitive parietal peritoneum under pressure of the examining hand.

Perforation of a gastric or duodenal ulcer is heralded by violent pain of the visceral type of short duration, which subsides immediately upon perforation into the general peritoneal cavity. For a time, while the patient is collapsed and during this quiet interval, pain in the abdomen may not be very marked. This quiescent period soon passes and pain of the parietal peritoneal type in its most severe form develops. It is due to stimulation of the parietes by the highly irritating secretion of the stomach or duodenum. It may be first localized to the epigastrium and then spread downward until it is diffused over the whole abdomen. During this time, the abdomen assumes a board-like reflex rigidity.

Eusterman and Balfour pointed out that upper abdominal pain may be colonic in origin, and evidence of origin from the colon may be estab-

lished in the following ways; first, the situation and distribution of the pain usually follow the course of the colon; second, the pain is usually reactivated during giving of an enema and is relieved after defecation; third, catharsis or failure to have a bowel movement for several days aggravates the pain; and fourth, relief is secured by administration of antispasmodic or sedative drugs. Proctologists know that the mucous membranes of the rectum and sigmoid flexure are insensible to cutting, clamping and cautery, but that when the attachments of the bowel are pulled on there will be pain. This pain is felt in the lower left quadrant of the abdomen. The pain of diverticulitis may be due in part to spasm, in part to obstruction of the lumen, and in part to the irritating effects of toxins on the nerves in the parietal peritoneum.

In the small bowel, or any hollow organ, there are three ways of producing pain; first by stretching the muscular wall; second, by causing it to contract powerfully; and third, by pulling on its mesenteric attachments. Ulcerations of the small bowel are never painful unless there is obstruction. The severe griping pains of dysentery and cholera are due to the powerful contractions. The pain resulting from organic obstruction, such as an internal or external strangulated hernia, is of the same character, but of course more severe in degree of sudden onset and associated with sickness and distention of the abdomen. In obstruction due to some internal derangement, such as a Meckel's diverticulum, there are accompanying physical signs, and diagnosis is extremely difficult. In young infants it is sometimes difficult to tell how severe the pain is, since the child cannot help. The screaming attacks which accompany the violent contractions of the bowel in intussusception are, however, characteristic, and if blood is passed from the rectum or if a tumor is felt in the abdomen, the diagnosis is not difficult.

The liver, spleen, pancreas and kidney are markedly insensitive to pain. Abscesses, infarcts or slow growing cysts usually are painless. However, if the organ is rapidly distended, or if there is inflammation or irritation which reaches the parietal peritoneum or nerve endings in the arteries, there will be pain. Severe cases of hepatitis will cause no discomfort, but a rapidly arising passive congestion of the liver will cause pain. Infarcts in the spleen seldom cause pain, unless the periphery is involved and adhesions to the parietal peritoneum occur. Manipulation of the organ does not cause pain. The pancreas is normally a silent organ unless it is the seat

of acute injuries, inflammation or new growth formation. Then the pain is no doubt due to stimulation of the parietal peritoneum. Bourne has observed in three cases that pain was the only sign of a pancreatic carcinoma. It seems that this fact is not widely known. He points out that the pain from carcinoma of the pancreas has definite characteristics. It is very severe, jaundice is absent, and the patient sits up in bed bent forward for nearly the whole of twenty-four hours. It is further observed that the patients had always been in good health. When acute inflammation occurs in the pancreas, there is an intense epigastric pain going through to the back; this may be mistaken for biliary colic. However, the pain is of greater intensity and is not relieved by morphine even in large doses. The blood-stained, fat necrosing, intraperitoneal exudate causes stimulation of the parietal peritoneum with resulting rigidity of the anterior abdominal wall. The rigidity is not board-like as in ruptured peptic ulcer. The onset of the pain is, as a rule, less sudden than in a perforated ulcer.

In the kidney, pain is due to diseases producing sudden swelling, such as an infarct, acute glomerulonephritis or rapidly forming hydronephrosis. Renal pain is never felt in the center of the abdomen. It is usually limited to the corresponding loin and is radiated down to the labia, penis, groin or buttock. Without these facts, it would be difficult to differentiate gall-stone colic from renal colic. In renal colic there is muscular rigidity of the loin and tenderness on palpation, which differentiates it from intestinal colic in which there is no rigidity or tenderness.

Upper abdominal pain may be caused by the gastric crisis of locomotor ataxia. It is sudden in onset, severe in character, usually located in the epigastrium, followed by vomiting, pallor, sweating, subnormal temperature, fast pulse and cold extremities. This condition is suggestive of ruptured peptic ulcer. The history should exclude the symptomatology of ulcer, and with a thorough physical examination, there are found Argyll-Robertson pupils, the absence of kneejerks, a normal leukocyte count, and the locomotor and sensory disturbances. In the treatment of the pain of gastric crisis, it is realized that our knowledge in regard to the mechanism of abdominal pain is still inadequate.

Spinal cord tumors and caries of the spine many times cause pain in the upper abdomen. It is well known that brain tumors may occasionally cause pain similar to the pain of the kidney, liver, gallbladder and other upper ab-

dominal visceral diseases. These conditions can usually be found if they are remembered.

There are several chest conditions which give upper abdominal pain. Diaphragmatic pleurisy and lobar pneumonia may be ushered in with abdominal pain, with localization of tenderness and rigidity, which may resemble appendicitis. Careful physical examination, especially of the lungs, and x-ray should aid in correctly interpreting the pain. If the leukocyte count is over 30,000, pneumonia must always be ruled out.

Arteriosclerosis has given acute upper abdominal pain. It is associated with vomiting and is relieved by morphine or amyl nitrite. The pain of arteriosclerosis is looked upon as a vascular crisis or spasm. If cardiovascular disease is known to exist, then it is the surgeon who must attempt to establish the existence of an abdominal emergency along with the thoracic lesion. It must not be forgotten that medical and surgical conditions may coexist. Cope has stated that if after careful examination of both chest and abdomen the site of the disease is still doubtful, the trouble is generally in the abdomen.

Other conditions which might give rise to upper abdominal pain have been omitted, but it is hoped that the more common causes of upper abdominal pain have been discussed. It is hoped further that the content of this discussion may emphasize the necessity of complete study of the mechanism of pain in order to interpret upper abdominal pain. It is generally agreed that in three-quarters of the cases perhaps a differential diagnosis can be made correctly if only the physician will attempt to work out the case. All physicians know the facts that have been mentioned, but many fail to put them into practice when the opportunity arises.

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Discussion

Dr. Alfred A. Eggleston, Burlington: I feel very sure that all those present will agree that Dr. Netolicky has well covered for us a very broad, difficult subject. The general practitioner as well as the surgeon and internist are constantly called upon to treat patients whose presenting symptom is pain in the upper abdomen. Since the first step in the intelligent treatment of any disease is a diagnosis, one is met at the outset with no small task. There is no locality in the body which has more right to the title of "The Region of Medical and Surgical Romance" than the upper abdomen. Many surgeons are content to leave the diagnosis in doubt and to decide merely whether the symptoms warrant a laparotomy or not, feeling confident that when the field is exposed to the naked eye and their gloved fingers, a positive diagnosis can be made and suitable measures instituted to meet the condition. This, of course, is bad surgery and often leads to an unnecessary laparotomy which, if it does no actual harm, at least does no good. In the interpretation of upper abdominal pain few cases present such classical textbook pictures that a correct diagnosis can be made after one cursory examination. There are too many pitfalls in our path, and each and every possibility has to be weighed pro and con before one can ever feel reasonably sure of the diagnosis. In any given case the history is of the utmost importance and may be the only positive evidence at hand on which to establish a diagnosis. This, however, should under no consideration cause one to deviate from his usual careful routine of examination, no matter how tempting it may be to place a hand upon the gallbladder region or feel for epigastric tenderness. All of the symptoms present may seem to point definitely to the upper abdomen, yet the pupil, the heart, the lung or the pleura may be the genuine signpost pointing to the true and underlying condition. We can group the causes for symptoms of upper abdominal pain under three heads; first, disease of the central or peripheral nervous system; second, disease of the thoracic viscera; and third, disease of the abdominal viscera.

Under thoracic conditions one should never forget the possibility of angina pectoris as the cause of severe epigastric distress, especially since the rather marked increase of this disease during the past ten years because of business and professional uncertainties, strain and worries. This abdominal type of angina pectoris is common, as well as the angina abdominis from spasm and sclerosis of the branches of the celiac axis. In the abdominal group one must not lose sight of the possible existence of typhoid fever, which may have as its onset pronounced epigastric pain and vomiting, suggesting appendicitis or biliary disease. On the other hand I have

just recently operated upon a small boy on the ninth day of his disease of typhoid fever and removed a perforated, gangrenous appendix, with the continuance of his typical typhoid course and recovery. Because of the possibility that appendicitis may closely simulate almost any other abdominal condition causing pain, I was glad to hear the essayist emphasize Deaver's rule. It was Sir Berkeley Moynihan, some years ago, who gave us so much information on appendicular dyspepsia, and made the passing remark that he believed "most peptic ulcers are located in the lower right quadrant of the abdomen".

We must constantly realize how often pathologic conditions do not exist singly, and that the abdomen should usually be carefully searched after finding what is apparently the principal site of trouble, unless there is some contraindication to do so. For example it is surprising how often acute cholecystitis and acute appendicitis coexist. I want to thank the essayist for bringing to our attention the many conditions which may give rise to upper abdominal pain, one and all of which must be considered and in some cases excluded before opening the peritoneal cavity. In these days our most recent graduates seem to possess perfect confidence in their ability to do abdominal surgery, but often wholly fail to consider their lack of diagnostic acumen and the possibility that attacks of upper abdominal pain and nausea may be due to other causes than gallbladder disease, peptic ulcer or appendicitis.

EPIDEMIC ENCEPHALITIS*

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Epidemic encephalitis is an acute, non-purulent inflammation of the brain occurring in epidemic form. It is also definitely limited to one type, namely Type B. Encephalitis following infectious diseases, vaccinations, serums, arteriosclerosis, trauma, tumors, idiopathic and Economo's disease (encephalitis lethargica) is chiefly sporadic and is now more or less endemic in all civilized countries. The African "sleeping sickness," trypanosomiasis, is caused by a parasite (*Trypanosoma*) which is carried by a species of the tsetse fly and this disease is also outside the scope of this paper.

The cause of epidemic encephalitis is a filterable virus which is of general distribution throughout the world. It is believed to be transmitted by direct human contact. The same type of virus is found in herpes (shingles). Rabbits are very susceptible to herpes virus and this creates in them immunity to epidemic encephalitis virus. Dogs are entirely immune to both herpes and encephalitis virus. "Epidemic encephalitis virus is definitely neurotrophic. It is not determined if it has

also certain viscerotropic activities."¹ The virus in humans creates antibodies and usually immunizes the individual from his own reinfection and from subsequent infection by new contact. How long this immunity lasts is not definitely known, since the knowledge of the existence of the disease as a definite and distinct entity and the study of its habits are of very recent years. Immunity is also attained in some persons by association with or proximity to a case of acute epidemic encephalitis, although the person so immunized had not had an acute attack so far as could be determined. "Positive serum protection test is believed to be evidence that the serum donor has been in contact with the virus of epidemic encephalitis and has suffered either a clinical or subclinical type of infection. * * * Type A, virus of lethargic (Economo's) encephalitis is immunologically unrelated to Type B, virus of epidemic encephalitis."² The Japanese form of Type B virus of the 1935 epidemic differs some from the American form of Type B in its effects on animals, but this Japanese form of Type B virus will to some extent neutralize the American form of Type B virus. The virus of epidemic encephalitis can be inactivated in the laboratory by the use of soft x-ray and radium.

The early history of encephalitis as related to that of Type B is vague and indefinite. "It is safe to assume that the infective agent, whatever its nature, might have been in symbiosis with the human race for many hundreds or even thousands of years. It is even possible that minor or major epidemics of the kind we experienced in our midst (St. Louis, 1933) may have occurred here and there in the past and may have been classified under some other name, as for instance, brain fever, flu, meningitis, etc."² Italy had a mysterious epidemic in 1889 called Nona resembling others there in 1915 to 1925. In 1916 Von Economo of Vienna reported his findings on evidence so far available and classified them under a new name, encephalitis lethargica or Von Economo's disease. Beginning in 1871 and continuing through a few years following this report, Japan had many well defined epidemics which did not entirely conform to Economo's description. During the years following 1889 this Japanese form of epidemic became generally recognized over most of the Eastern world, but not until 1919 did the scientists of Japan decide to establish as a definite entity a form of encephalitis which they named Type B, or Japanese form. At the same time they established Economo's disease as Type A, or European form of encephalitis.

Following this 1919 decision Japan had many

*Presented before the Forty-first Annual Meeting, State Society of Iowa Medical Women, Des Moines, May 11, 1938.

severe epidemics covering large areas and involving many thousands of cases with a high mortality rate, as much as 70 per cent mortality in some of the epidemics. The same type appeared in Australia. There it was called the "mysterious" or "X" disease. Several small epidemics appeared in 1914 and 1915 on the Western front in France. It is believed Type B encephalitis has been prevalent in the United States for many years, appearing in very small, isolated epidemics, possibly in obscure localities, and has not been recognized. It is certain that some cases of epidemic encephalitis were eliminated from cerebrospinal meningitis wards which were filled with patients from many and varied sections of the United States as early as the fall of 1917. From 1919 to 1921 a small epidemic was recognized at Spokane, Washington. In Indianapolis, Indiana, from 1930 to 1932 one accompanied an epidemic of cerebrospinal meningitis. There was an extensive epidemic at Paris, Illinois, in 1932. These are definitely known. There were perhaps others, earlier and between these. Then in August, 1933, occurred the extensive epidemic at St. Louis, Missouri, in which more than one thousand cases were reported in three months.

American scientists established the cause of this St. Louis epidemic as Type B virus and found it differed slightly from Japanese Type B. Therefore they designated the Japanese "Form A" and the St. Louis "Form B," both of Type B and affixed the adjective "epidemic" to Form B thus giving us a new word in the nomenclature of medicine, namely, "epidemic encephalitis" or American form of the disease.

"The virus of Japanese form encephalitis and that of the St. Louis form are distinguishable from each other not only in their effects on monkeys but also in immunological responses demonstrable by means of cross neutralization tests."³

"The virus of epidemic encephalitis, although having a predilection for certain levels, may attack almost any part of the nervous system and in so doing may affect some one or other part only, or several parts together to an equal or unequal extent. It may thus give rise to two broad classes of disability, which, although necessarily closely intermixed in effects, may be termed 'psychotic' and 'physical' respectively."⁴

The period of incubation is usually from three to twenty-one days. The acute attack may resemble a light influenza or cold and be so slight and short that it is not brought to the attention of a physician or is dismissed without proper diagnosis. If more severe, there may be some of the following symptoms: headache, increasing tem-

perature (pulse and respiration may or may not increase with temperature or in same rate), vomiting (sometimes projectile), irritability, restlessness, hypertonicity of muscles, rigidity of neck and back, positive Kernig's sign, tremors, convulsions, involuntaries, diplopia, ptosis, vertigo, transient spastic paraplegias, disorientation, semi-consciousness, delirium and coma. The laboratory findings are mostly negative except for the spinal fluid which is clear or only slightly cloudy, and may show a slight increase in pressure, sugar, globulin and cells, and so be differentiated from cerebrospinal meningitis. The reflexes vary and may be transient. A positive Kernig's sign is most frequent and abdominal reflex may be diminished or absent. When absent there is usually severe disturbance of bowel action. The acute stage lasts from three to ten days or longer and ends in coma and death or convalescence.

"The prognosis (stated in early reports of the St. Louis epidemic) varies with the stage of the disease and the age of the patient. Those who passed from delirium into coma did not recover. Those who died were mostly older adults. There were seldom two cases in the same household. Apparently no environmental factor influenced its occurrence. There was no evidence of contagion. Spastic paralysis appeared in some during the acute stage and disappeared soon after. In some, transient paralyses appeared later as sequelae. As in all epidemic diseases there are mild abortive cases."⁵

If this were all, it would be well; but unfortunately there is much more. Those who live and do not entirely recover and many who seemingly recover following the acute attack, at some time later, perhaps weeks, months or years, pass into the chronic or postencephalitic stage and its sequelae. The fatalities are variously estimated at about 20 per cent in the acute stage; 70 per cent of the rest later had residual effects; leaving only ten per cent who were presumed to be well. However, no one knows what future years may have in store for this ten per cent, since the sequelae are sometimes very belated and insidious in their onset. These sequelae present a supreme problem which has not been solved. They are the natural result of the degeneration of tissues of the central nervous system, the degeneration instituted by the inflammatory condition of the acute attack and demonstrated in defective function. It is thought some of the destruction of tissue may be the result of the hyperactivity and massing of phagocytes in attacking the virus during the acute stage.

The sequelae of epidemic encephalitis may be so

numerous, varied, transient and vacillating, and may develop in such an irregular fashion as to make the diagnosis, in the absence of the history of an acute attack, very difficult. In association with the person one may first notice some psychotic changes, or defects in the mental conduct or attitude of the individual. Some writers call this the encephalitic temperament.⁶ Usually in an adult this will consist of a depressed state of mind with brooding and worry and introspection out of all proportion to its cause or from an imaginary cause. There may be oculogyric crises, hysterical complaints of vague hurts, pains and imaginary accidents, craving much help and sympathy in all. One can believe the person realizes his deteriorating condition and, not being aware of the cause, has fallen into a state of panic. At this stage symptoms may be so slight that, without a history of an acute attack, a careless diagnosis of hysteria could be made. Beware the term; there are lesions here which can be found and most certainly in time they will progress.

There may be disturbance of the vegetative centers, causing hyperhydrosis, salivation and drooling, reversal of sleep mechanism (awake nights and sleeping in daytime), defects in the heat centers (failure in response of internal body heat to external chilling), resulting in chills following baths or drafts of cold air. This excessive heat disturbance may be the cause of some of the night restlessness. "The disturbance in heat regulation is probably due to a central lesion but it cannot with certainty be ascribed to any one locality, because of the diffuse character of the lesions. However, there is agreement in recent literature that the hypothalamus is the chief heat regulating center, and lesions in this area probably cause the defective heat regulation associated with chronic encephalitis."⁷ The normal individual responds sufficiently to external cold by increased consumption of oxygen. The postencephalitic patient may not do so.

There may be real dysphasia or difficult speech from a central lesion as well as from rigidity of muscles of speech and slow organization of thought. Propulsive, retropulsive and compulsive states may appear, as well as polydipsia (excessive and urgent thirst), fits of temper, weeping and laughing, idiotic nonsense and destructiveness, paranoialike aberrations, and obsessions of grandeur, persecution, jealousies and suspicions. This hyperkinetic state tends to become the dominant condition in children and adolescents following the acute attack of epidemic encephalitis. They may develop behavior problems and often become noisy, unruly and criminal. They may become

unfit to associate with normal children and should be confined in carefully selected institutions where they can be properly treated early in the course of their condition, and where one can exercise control, restraints and direction not possible in the usual home. If these patients are treated early and properly cared for they will usually recover. One can easily believe some of the young delinquents and criminals of this era may be neglected individuals of this class. Adults who have already established ideals and proper habits of life do not develop these behavior problems, and usually lead a normal life so far as their social contacts and moral habits are concerned.

After a varying length of time the adult patient may begin to slow up and pass from this hyperkinetic state into the bradyphrenic state; or he may skip the first and develop the latter independently and immediately following the acute attack or at any time afterward. This is a general slowing up. He grows so irresponsible of any personal duties in life that he drops his mood of depression (which is a relief to the family and attendants) and seemingly also his regrets of a useful life and its ambitions ending so prematurely and disappointingly. He tends to grow untidy, seemingly lazy and indolent. He fails to arouse himself in an intelligent manner in thought and conversation. He organizes his thoughts with difficulty. There is lack of interest, application and memory, inability in reasoning, calculating and sustained application of thought, especially of a mathematical nature, so that he makes many mistakes in the simple mathematical calculations of ordinary life and business. He becomes incapable of making proper decisions. Due to slow and difficult organization of thought he may be easily misled by designing persons. "There may be transient, spasmodic muscle contractions, marked hypotonic and extrapyramidal postures, transient maniacal states and epileptiform seizures as postencephalitic residuals, sometimes without any symptoms of parkinsonism."⁸ During all this time there is always severe and shifting headache and recurring attacks of lethargy and increasing disability of mind and body. Some of these patients certainly, and probably all who reach this stage, are at transient times and in various ways in some aspects mentally defective, but they cannot be classified in any established form of insanity.

At any time during the acute attack, or weeks, months or years after, the postencephalitic Parkinson's syndrome may appear with its classical physical changes. Following epidemic encephalitis, this is essentially an akinetic-hypertonic syndrome. It gradually or intermittently, slowly

progresses to a fatal end. This syndrome develops in a somewhat similar manner as the same condition following other causes. Its classical symptoms are too well known to merit repeating here; but in this case it is complicated by the psychotic leavings of epidemic encephalitis which are not so pronounced following some of the other causes of parkinsonism. This makes the diagnosis and treatment more difficult. To refresh our minds, some of the effects of parkinsonism may be mentioned. At the outset and increasing thereafter, there may be noticed tremors, tripping, falling, rigidity, spasmodic contractions of groups of muscles, lagophthalmos, ptosis, paralysis of convergence, diplopia, difficulty in writing and speech, masked face, wasting of body flesh, cold and clammy extremities, claw hands, semi-flexed stiff knees, ticks, contortions, drooling of saliva, loss of arm swing in walking, torticollis, lethargy, irritability, various shifting pains associated with special nerves, transient respiratory ticks with slow breathing resembling Cheyne-Stokes respiration, spasms of hiccoughs, anginal-like transient heart attacks, and transient defects in metabolism. Obesity of a transient nature and edematous conditions may appear. Obesity is not uncommon in the beginning of this stage. If the patient is attended by one of skill, tact, kindness and courage who is capable of keeping the patient's cooperation, he may be kept somewhat active physically and mentally; if not, he may become bedridden and helpless long before death. This is not a typical picture of parkinsonism following paralysis agitans or any of the idiopathic types which pursue a more or less regular, progressive course and do not have the accompanying extreme psychotic element.

There is also a second special group of post-encephalitic parkinsonism following some cases of epidemic encephalitis. It is very rare but, by careful search, reference is found in the literature of very recent origin. "This group was established as a definite clinical and anatomical entity by Jakob later than the year 1923."⁸ The difficulties in diagnosis and care of this group are multiplied. "This group of parkinsonism is characterized by successive, irregularly recurring febrile attacks, exhibiting symptoms in saccades."⁹ During each of these febrile attacks the patient goes consecutively through a cycle of symptoms consisting of fever, irritability, restlessness, severe headache and various other symptoms of an acute attack of epidemic encephalitis, followed by stupor and extreme somnolence. This in turn is followed by an escape from the cycle and a return to intelligence and limited physical activity for an indefinite time.

Then again another cycle overtakes the patient and proceeds as the former ones, continuing in like manner to the end. As each cycle begins new symptoms may appear and old ones may become submerged in the importance of new developments. These cycles may be widely separated in time at first but increase in frequency and severity. It is easy to believe that the great variety of symptoms and sequelae exhibited by this group and their transient changing character may be due, in part, to the inflammation and edema of the brain accompanying each exacerbation, and decrease of this pressure as the cycle ends results in the everchanging picture. The fever and cycle complicating this group are caused by an activated, latent virus in persons who have not developed complete immunity from the first attack of epidemic encephalitis. "They are always potent carriers and may infect others through immediate contact."⁹

The pathologic studies in postencephalitic cases are so extensive, varied and undetermined at this time that it is entirely beyond the purpose of this paper to enter into a review of findings except to quote the following. "The most frequent type is the one slowly progressive, characterized anatomically by a purely parenchymatous degeneration with rarely an infiltrative process and without focal distribution. In such cases the substantia nigra is uniformly affected, then follows the pallidus and rarely the striatum, which may even be intact. Sometimes the anterior cortex is slightly involved but the other parts are intact. Some report meningeal involvement and destruction of cells in the anterior horn of cervical cord. The second rare group is characterized by successive febrile attacks and also by a polymorphous and progressive syndrome in which the anatomical picture consists of focal processes with typical infiltration phenomena of a diffuse type. These cases are nearly exclusively limited by the degeneration of the substantia nigra (zona compacta) and are characterized by a pronounced akinetic-hypertonic syndrome of parkinsonism which may be preceded by tremors and pulsions."¹⁰ In the acute attack in all cases, and in the second group during all the life of the patient, there are generalized inflammatory processes in the central nervous system. "In the face of such diverse pathology it would be futile to attempt the definite localization of any one symptom of the entire syndrome of the various types of Parkinson's disease."¹⁰

Concurrent diseases or defects have no unusual relation to cause and effect in this disease. Reflexes vary at different periods in the same patient. The whole category of symptoms is a changing

picture during the entire course of the disease. Positive Kernig's sign is quite constant. Abdominal reflex may be reduced or absent during the acute stage at least, its absence causing severe constipation in some cases. Muscle rigidity of the extrapyramidal type is usually present to some extent. This all varies in proportion to the severity of the attack and the location, extent and duration of the lesions in the central nervous system. Arthropathy (a joint lesion without destruction) may occur in children, accompanied by transient decalcification in the ends of adjacent bones. The eye conditions are not pathognomonic but may determine a central lesion; therefore all such patients should be examined early and often by a competent ophthalmologist. There may be defects in pupillary accommodation, paralysis of convergence, defects in conjugate movements (causing squints and diplopia); there may be nystagmus, ptosis, exophthalmos and choked disc; any one or all of these may be transient and changing as are nearly all of the symptoms of epidemic encephalitis and its sequelae. The spinal fluid test is not of specific importance except as it eliminates other diseases. It may contain the virus. It is usually clear or only slightly cloudy and may have slight increase in pressure, cell count, globulin and sugar. The blood test may not be useful in diagnosis. The blood may have increased leukocytes and lymphocytes. Blood pressure may vary with the stage of the disease and lack importance in diagnosis. The metabolic rate may be high, low or normal in the same individual at different times with no definite determinate cause for the change.

"Long periods of somnolence are not restricted to epidemic encephalitis. The first case reported was in 1813. Some one has reported a record of sixty-four cases up to the year 1931 of long continued sleeping. It may occur in hysteria, catatonia, Economo's disease (sleeping sickness), hypnolepsy, multiple sclerosis, cerebral concussion, and cerebral tumor. The case of Patricia Maguire was Economo's disease (encephalitis lethargica) or Type A."¹¹ The somnolence of epidemic encephalitis is not coma, as proved by the following statement of one of my own patients, "I wanted to tell the hospital physician I did not have coma, did not have nephritis, did not need hot packs, was accustomed to these sleepy spells, but I could not do it." There was no paralysis at this time in this patient. The patient has some constant knowledge of what is going on in his presence but lacks ability to arouse himself or assert his personality. This would seem to be a hyper-inhibition as well as a defect in sleep centers.

Among conditions which may need to be differentiated may be the following. Cerebral tumor may have edema of optic disc, which is constant and increasing; in epidemic encephalitis, if present, it may be transient and changing. Cerebrospinal meningitis has cloudy spinal fluid with high pressure, polymorphonuclear count, rigidity of back and neck, a positive Kernig's sign and may contain meningococci. Tubercular meningitis spinal fluid is usually very low in chlorides and may contain tubercle bacilli; the disease is slower and more chronic in onset and course than the acute attack of epidemic encephalitis. Also a history of tuberculosis may be found in the patient or his environment. Anterior poliomyelitis fluid is clear and there is small increase in pressure, cells and sugar. Paralyzed muscles are flaccid and the paralyzes lasting; those in epidemic encephalitis are spastic and transitory. Catatonia, malin-gering and hysteria have no definite physical lesions.

The prognosis for adults with sequelae is poor. For children with behavior problems only, the prognosis is good if the patient is properly cared for early and for a sufficient length of time. Patients, either children or adults, with parkinsonism sequelae almost never recover, but slowly progress to a fatal end. One group of 162 patients gave 4.9 per cent recovery, mostly in the behavior problem group. The state of Massachusetts reported 10,000 cases of epidemic encephalitis during the years 1917 to 1934. Of these, 600 were admitted to mental hospitals. St. Louis in 1933 reported 1,000 cases in the months of August, September and October. The Iowa State Department of Health reported 266 deaths from epidemic encephalitis in the years 1923 to 1937. Of these it appears only 143 had been reported before death, which might indicate that the diagnosis had not been easy. Some of the early epidemics in Japan gave as high as 70 per cent mortality in the acute stage. Definite reports on the sequelae are hard to get, since the element of time is lacking for determining and tabulating definite results and since some of the sequelae may appear many years after the acute attack or the patient may have died of another cause.

The treatment of the acute stage is symptomatic. "Epidemic encephalitis (the acute stage) is essentially a self-limiting disease."¹² There is no specific treatment. The usual sedatives are employed for pain and restlessness. All forms of barbiturates are contraindicated, especially so if any muscle rigidity is present, since they exaggerate the symptom. Large saline purges are used to relieve constipation, cerebral edema and pressure

symptoms. Fifty per cent dextrose solution is appears only 1-3 had been reported before death; used intravenously for the two latter reasons. Diarrhea is relieved by camphorated tincture of opium and bismuth subnitrate; hydrotherapy is used to relieve hyperpyrexia and headache; various serums and vaccines, including Rosenow's, and convalescent serum and blood transfusion are reported of little value. Pre-existing and intercurrent diseases are treated by the usual methods. Spinal punctures are uniformly done for diagnostic purposes and to reduce cerebral pressure if it is present. Autogenous serum has not been reported favorably.

It is well known that no treatment tends to permanent improvement and that patients who reach the bradyphrenic and parkinsonian stage will eventually progress to a fatal end, but these symptoms may be ameliorated by the use of the belladonna group of drugs in the form of dose called "high atropine dosage." This relieves the physical but not the psychotic symptoms. This method was developed between the years 1929 and 1934, and it is used if parkinsonism is present. The method consists in using atropine sulphate in doses of increasing size until muscle relaxation and a state of euphoria is attained. Then the dose is decreased until muscle rigidity recurs. Then an optimal dose should be decided upon between the first and second size and just enough given to maintain a steady state of euphoria. This should be continued indefinitely. Naturally the amount required may be different in each individual. Any pupil dilatation should be overcome by glasses. "All the atropine does is to release the brake in the parkinsonian's musculature. In no case did the parkinsonian syndrome completely disappear and while the physical disability may have been somewhat relieved by the treatment as to make the patient fit for work, very few are in a condition to compete with normal persons in the labor market."⁴ Hyoscine will relieve temporarily the oculogyric crises and this drug, as well as atropine, is used in combination with benzedrine sulphate since it is believed that these combinations assist each other. Benzedrine sulphate is a sympathomimetic drug in the same class as ephedrine and epinephrine, and while it is employed by some with success it has many contraindications and should be used with care.

"Some of the symptoms of chronic epidemic encephalitis are due to parasympathetic stimulation."¹³ Benzedrine sulphate gives temporary relief in this class of cases. This is true also of

scopolamine and ephedrine. They give relief, but undesirable results of their use may occur in some patients. Datura stramonium seems to stand next to atropine with maximum results and minimum objectionable features. Before the development of atropine treatments, patients in group two (those with recurring febrile attacks) and with parkinsonism, were relieved and often the cycles were shortened and even averted by the conservative dehydration treatment, which decreased the cerebral pressure and, therefore, pain and lethargy. However, the physical well being of the patient could not be sustained for any length of time under this treatment, if it was used sufficiently to obtain results.

"It seems that one of the many curses accompanying the march of civilization will be an increased liability of the human central nervous system to frequent and diversified infections. While many of the other contagious and epidemic diseases are gradually retreating, encephalitis and similar infections of the central nervous system are apparently taking on new forms and tending to invade territory heretofore unmolested."² If this be true, the condition deserves our most careful preparation for future action as the need may present itself.

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ALCOHOL IN RELATION TO THE
HUMAN SYSTEM*

THE PRESIDENT'S ADDRESS

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A president's address, as you know, is either a review of the activities of the society, or a summary of the status of the profession, or an abstract of some one topic of especial interest to the profession. This year I propose to make the address along the last of these three lines. The one topic with which I have been so long interested, and which has lately claimed the special attention of the medical profession because of the recent blood tests for intoxication in automobile accidents, is, "the relation of alcohol to the human system."

Alcohol is defined in Dorland's Medical Dictionary as ethyl hydroxide, C_2H_5OH , a colorless volatile liquid, of aromatic odor, distilled from various products of vinous fermentation. In the practice of medicine alcohol has been used internally as a therapeutic agent, or locally as an antiseptic or astringent. In the office and hospital it is often used for the preservation of anatomic and biologic specimens. In this paper we are also concerned with the general use of alcohol, defined as the substance found in beverages by which they become known as alcoholic drinks, and the problem is generally known as the alcoholic problem. This problem seems to be as old as man. In ancient Hebrew literature seven hundred years before Christ was born there are warnings about the use of alcoholic drinks. The same warnings are found in Greek and Roman literature. As far back as 1552 the British Parliament passed an act for the control of houses in which alcoholic beverages were sold. In our own country we have had the problem about as long as we have had a nation. It was at the close of the Civil war that the license system was adopted by which a legal status was given to the selling of alcoholic beverages. With much regret Lincoln signed the bill, and in doing so he insisted that the plan was a temporary expedient. Said Lincoln, "The union is in desperate need of funds, and even the devil must be made to contribute in the emergency." He is also quoted as saying, "After the reconstruction the next great question will be the overthrow and suppression of the legalized liquor traffic."

I have given this brief historical sketch to bring out the point that in dealing with the question of alcoholic beverages there have always been, and there are today, two parts to the prob-

lem. One is the effect of the use of alcohol on society; the other is the effect on the individual. This paper deals only with the second part, or the effect on the individual. Many of us believe it is in this individual field that we have the real problem of alcohol. This was also Dr. Webster's idea. Some time ago Dr. George W. Webster, formerly professor of physiology, physical diagnosis, and chemical medicine in Northwestern University, also president of the Illinois State Board of Health, wrote, "The dissemination of the truth in all medical teaching is one of the highest purposes to which the medical and lay press is everywhere called. As in other scientific fields, a large number of scientific men and women, employing exact scientific methods have substituted tested thought for philosophic theorizing concerning the action of alcohol." In the field of the effect of alcohol on the individual, scientific research should be our guide. In presenting the following facts regarding the action of alcohol on the human system only authoritative presentations of the subject are given.

In speaking upon the effects of alcohol on the body I shall treat the topic first in a general way; that is, the effect upon the body as a whole; and second, in a specific way, that is, the effects on specific organs of the body. Of first importance is the changed point of view of the effect of alcohol on the body. Once it was thought that alcohol was a stimulant. Today every doctor knows that alcohol is primarily a narcotic. The old idea was that alcohol as a medicine could be relied upon to stimulate the heart, to improve respiration, and to add vigor to the body in general. Dr. Haven Emerson of Columbia University has shown that this idea is erroneous. The doctor proves his statement thus, "The use of alcohol to provide recovery from a faint, for instance, is due to the knowledge that it has an irritant effect on the surfaces of the mouth and throat, the ordinary immediate effect being too sudden to be explained by any absorption of alcohol or its conveyance by the blood to the heart or brain. Other irritants, such as volatile ammonia, smelling salts, or the smoke of burning feathers act as promptly and by the same kind of sensory irritation." More and more the medical profession is coming to the point of view that the general effect of alcohol on the body is narcotic, especially potent in deadening the automatic control centers of the human machine. When the automatic control centers are depressed, the several functions of the body act out of proportion, or too continuously. First we notice an increased muscular activity, not from stimulation, but from loss of control caused by

*Read before the Forty-first Annual Session, State Society of Iowa Medical Women, Des Moines, May 11, 1938.

depression. Many tests have proved that alcohol, in all strengths and under practically all experimental or so-called natural conditions, tends to exert a depressant effect on the tissues of the nervous system. This was brought out by the noted pharmacologist, Schmiedeberg. He showed that the action of alcohol was wholly a depressant one. More than that, the controlling or inhibiting functions were the ones first depressed; the depression gradually spreading to all parts of the body. This, the Schmiedeberg view, is accepted today by practically all pharmacologists and is taught in all of our medical schools.

The second general effect of alcohol on the body as a whole is centered about the one word poison. Alcohol is not a food; it is a poison. In discussing this aspect of the question we must examine the process of its absorption and elimination. Alcohol brought into contact with many different parts of the organism is very rapidly absorbed, but especially easily from an empty stomach; although there is no absorption of non-volatile aqueous liquids from a stomach, yet alcohol is freely absorbed. After absorption it passes into the blood and is distributed to all the organs of the body. The authority for this statement is Autenrieth and Warren. Walter R. Miles writing on the comparative concentration of alcohol in human blood and urine at intervals after ingestion, points out that the demonstrations and procedures are remarkable and prove that not only is the alcohol found in the blood but it is recoverable from the other body fluids and tissues, particularly at or following the time when it appears maximally in the blood. Friedman and Volmering, among others, have studied its contents in the tissues and emphasize the relatively large amount found in the brain. In the case of a man who died at the climax of severe acute alcohol poisoning the autopsy showed 21 per cent in the liver, 33 per cent in the blood, and 47 per cent in the brain. Nicloux demonstrated the presence of alcohol in the amniotic fluid and milk, as well as in the urine where its presence has long been known to exist.

We may now take up the question of elimination. Uncertainty concerning the subsequent fate of ethyl alcohol in the human organism has finally been removed. Experiments have shown that ethyl alcohol is never eliminated unchanged through the skin; at most only 1.0 to 1.5 per cent passes off unchanged through the kidneys; and only 1.6 to 2.0 per cent through the lungs. The remainder is completely oxidized in the human organism to carbon dioxide and water. Not only is this poisonous effect known and traced, but

there is created in the body a greater susceptibility to other poisons.

May I sum up this part of the paper on alcohol as a poison by quoting from the researches of Dr. Julius Friedenwald. He made elaborate experimental investigations extending over four years. These experiments were carried on under the auspices of a subcommittee of the Committee of Fifty at the pathological laboratory of the Johns Hopkins University and Hospital. Careful study was given to the stomach, liver, kidneys, heart, blood vessels, and nervous system. Dr. Friedenwald makes due allowances for other causes of death, and states that individual predispositions, and predispositions of special organs of the body, are important factors in the etiology and pathology of alcoholic poisoning. However, in his summary he states that after making due allowances for all such conditions there still remain enough cases in which alcoholic poisoning is the cause of serious diseases of the brain, spinal cord and nerves in persons of previously normal constitutions, so far as can be ascertained. In addition, the heart, liver, kidneys, and pancreas are all seriously injured by the use of alcohol. Finally there is a lowering of resistance to infectious diseases. In general, then, it is safe to conclude that alcohol is not a food, it is a poison; and it is not a stimulant; it is a narcotic.

Let us now turn to the discussion of the effects of alcohol on the different organs of the body. Time does not permit us to discuss all the organs of the body, nor as many as we would like. We will, therefore, confine our remarks to two systems; namely, the blood system and the nervous system.

In regard to alcohol and the blood, Julius Jerendary points out that alcohol is rapidly taken up by the blood and distributed throughout the body. Alcohol reaches its highest concentration in the blood, usually within an hour after being taken into the body. It then gradually lessens as the alcohol is oxidized, which has been found to occur at the rate of about five grams an hour in the average human subject. Traces of alcohol will remain in the blood for about twenty-four hours, but during that time over 95 per cent of that ingested is oxidized. The alcohol which escapes combustion in the tissues is excreted by the kidneys unchanged and by the lungs. Traces are found in the various organs of the body, such as the brain, liver and bile, spinal fluid, etc. These facts are utilized in certain chemical tests to determine the presence of alcohol.

It is well to keep these facts in mind when thinking about the pathologic action of alcohol on

the blood. Sir William Wilcox, M.D., physician to St. Mary's Hospital in London, in writing on this said that the red matter of the blood (hemoglobin) forms a close union with alcohol, because, as alcohol has an affinity for water, the alcohol circulating in the blood fluid abstracts moisture from the red corpuscles, causing them to shrink and harden, change their shape, and to lose some of their ability to carry oxygen. This not only reduces the nutrition of the whole body, but diminishes activity, because oxygen is the causative carrier of vitality and activity. Furthermore, alcohol in the blood diminishes the activity of the white blood cells and kills many of the leukocytes, which are the scavengers of the body. Thus septic conditions readily arise because the body defenses are diminished. This is one reason why acne, boils, abscesses, eczema, and skin troubles so readily affect chronic alcoholists. We can hardly say that blood and alcohol do not mix; the fact is they mix too readily, but the result of the mixing ought not to be called blood. In other words alcohol destroys the primary characteristics of good blood, delays the healing of wounds and the curing of diseases.

The next effect of alcohol on the blood is the matter of blood pressure. Each beat of the heart forces blood into the arteries and stretches their semi-elastic walls. Blood pressure is the measure of the tension exerted on the blood by the arteries; or stated in another way, how much is the blood pressing against its restraining walls, the arteries. When the heart pumps measured volumes of blood into the arteries, the arterial walls are stretched to a greater extent and blood pressure rises. The more rapid heart rate after the ingestion of alcohol is due to its irritant action, but soon the depressing action sets in and the normal functioning of the heart is retarded. It is well known that alcohol produces dilatation of the capillaries over the periphery of the body, and this may become permanent if its use is prolonged. We cannot conclude that alcohol is a direct cause of high blood pressure; but we are safe in saying that it is often a contributory cause, and that alcohol, if used in cases of high blood pressure, is always a disturbing and dangerous factor.

We now look at the action of alcohol on the brain. Here all writers are in agreement. The most deleterious effects of alcohol are on the brain. We cannot speak of all the effects, but will limit our remarks to the effects on the higher faculties, the specialized abilities, reflexes and mental derangement. Speaking first about the effect of alcohol on good brains in intelligent,

capable people, we again quote from Dr. Webster who says, "It is well known that in both the race and the individual the higher intellectual faculties are the latest to be acquired and are connected with the last developed parts of the brain. These higher intellectual faculties are the first to suffer from the use of alcohol. The hierarchy of brain functions is suspended, instinctive impulses gain control, and inhibitions are withdrawn. This period of excitement is erroneously called stimulation. It should be called the period of 'loss of control'."

Kraepelin and his associates studied the effect of alcohol upon special abilities in man. They noted the effects on such processes as memorizing, word association, addition, typesetting and others. They found that alcohol lessens performance, and finally wrecks the ability. In the smallest effective doses alcohol lessens the accuracy and speed of performance. There is first a marked intellectual depression, and this depression becomes more marked as the dose increases. There is a steady decrease in motor coordination as the record of the performance steadily decreases. Of course this is only a scientific proof of a general truth. Dr. Edwin Bowers studied special ability in music and alcohol. There, too, both in instrumental and vocal music was the same story of the gradual lowering of ability until finally it was completely lost. Alcohol impairs the hearing and the accuracy of the sense of melody and harmony. It lowers the delicate muscular control. With singers the effect is especially pernicious because of the irritation of the vocal cords and the mucous membrane lining of the respiratory passages. Alcohol hardens and toughens the delicate mucous membrane. It causes the outer layers of the membrane to degenerate, and new tissue must be created to replace that destroyed by alcohol erosion. In the meantime the membrane is incapable of performing its normal function in voice production.

We now come to the problem of alcohol and reflexes. In 1915 Dodge and Benedict made an elaborate study of this matter. Their studies are intensely interesting both in methods and results. They found that the patellar reflex or the knee jerk was depressed by alcohol. This means that the time for response to the tap on the tendon was lengthened, and the heights of contraction decreased. Similarly affected was the protective eyelid reflex, or the closure of the lid in response to a sudden stimulus. The time was prolonged and the extent of the movement lessened. In the case of motor coordination tested by photographic

devices it was found that alcohol had a depressive effect. Finally in the case of the very complex series of reflexes in sex activity, alcohol has a baneful effect. "Alcoholism," said Dr. Wilcox, "increases sexual desire but diminishes sexual power. There is no reasonable doubt that persistent alcoholic excess, in either parent, will diminish fecundity, increase liability to stillbirth, and tend to result in weak and defective children. Moreover, it seems beyond doubt that this influence of alcohol on the germ plasm is transmitted by heredity to future generations not exposed to alcohol."

We have spoken of the effects of alcohol on the higher intellectual functions in the normal brain, and of the effect on special abilities and reflexes, both simple and complex. There remains to say a word about alcohol and mental diseases. Dr. Emil Kraepelin, professor of mental diseases in the University of Munich, and one of the eminent living authorities on mental and nervous diseases, has for over thirty years been investigating the effects of drugs. He has studied the relation of alcohol and insanity, alcohol and heredity, and alcohol and vice. He concludes there is in every case a vital connection. He has established the fact that alcohol is one of the causes of degeneracy, and that uniformly it affects all the faculties. The higher and more involved the faculty the more definite and measurable the effects. Dr. Kraepelin has proved that the effects of alcohol both physiologically and psychologically are cumulative; that if it is continually used, even in small doses, harm is increasingly manifested; the powers of coordination are impaired, and the destruction of tissues and protoplasm hastened.

It would seem, then, that enough evidence has been collected in the medical profession, and substantiated by scientific proof and procedure, to give us a solid foundation of knowledge. We are not theorizing today when we say that alcohol is a narcotic; alcohol is a poison. Alcohol weakens the channels through which the blood is carried, and pollutes the blood itself. Finally alcohol exerts its most deleterious effects on the brain and nervous system because it weakens the higher intellectual faculties; it steadily, but surely, destroys specialized abilities; it disturbs and tends to render impotent all reflexes; and it is both a primary and contributory cause of mental diseases. In a word then, the effect of alcohol on the human system in any quantity, or for whatever purpose, is injurious.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

A RECONSTRUCTION OPERATION FOR PSEUDARTHROSIS AND RESORPTION OF THE NECK OF THE FEMUR*

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The procedure to be described represents an attempt to develop an operation for ununited fractures of the neck of the femur that would free the upper femur from the all too often devastating action of shearing stresses. The strong shearing forces which tend to draw the femoral shaft upward are well known to all who have treated fractures of the upper femur. Some of the largest muscles in the body, gluteals, iliopsoas, and thigh adductors, take an active part in producing these stresses. When weight is borne on the extremity the shear is tremendously accentuated, the total body weight above the hip joint becoming a great shearing stress on the femoral neck. In reconstructing the hip for an ununited fracture of the

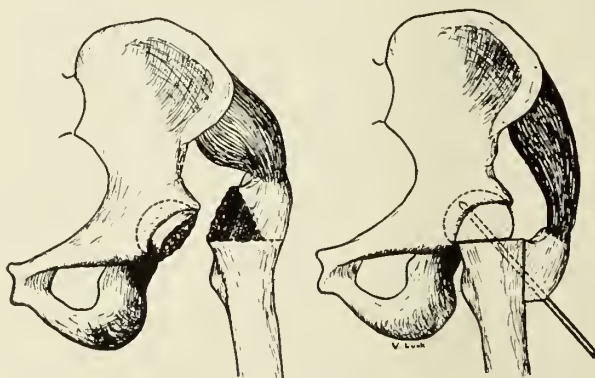


Fig. 1. The broken lines in the trochanteric region represent osteotomy sites; shaded area is resected. The femoral shaft is pressed medially to set directly beneath adducted femoral head. The greater trochanter is set down onto shaft.

neck of the femur it is logical and mechanically sound to eliminate, if possible, these shearing stresses. Had these forces been dealt with successfully in the original treatment of the fracture the pseudarthrosis would very probably not have occurred.

The technic to be presented has some features in common with other operations for reconstruction of the hip, particularly the Brackett operation, the Voss-Thompson-Stephens reconstruction, and the osteotomies of Lorenz and Pauwels. The writer's procedure is unique in this respect: in the vascular intertrochanteric region a bed, free of shearing stresses, is prepared for the fracture

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surface of the femoral head. In a reconstruction operation of this type the value of transforming the shearing stresses of the upper femur to pressure stresses cannot be overestimated.



Fig. 2. Roentgenogram of an eight month old fracture of the neck of the femur in a white female, age 63. Nonunion, malposition, resorption of neck, and weight bearing intolerable.

PROCEDURE

A Smith-Petersen approach is used, but in thin patients the iliac portion of the approach is not needed. The hip joint capsule is thoroughly exposed anteriorly, superiorly, and inferiorly, and fibers of the rectus femoris originating from the capsule are reflected medially. By subperiosteal stripping the intertrochanteric region of the femur is exposed anteriorly and laterally, and the capsule



Fig. 3. Postoperative roentgenogram taken through plaster cast. Lateral end of Steinmann pin is incorporated into cast.

is opened by an incision from the acetabulum to the intertrochanteric line. To gain further exposure the capsule is stripped off from its anterior intertrochanteric attachment, although if it is greatly thickened a partial resection may be necessary. A good exposure of the femoral head is essential. All fibrous tissue interposed at the site of the pseudarthrosis is resected, a step which may require considerable dissection in a nonunion of long duration. The fracture surface of the head is freshened, and if it is sclerotic should be perforated by a few drill holes. Extensive drilling and curetting are avoided because of the possibility of disturbing circulation in the head.



Fig. 4. Roentgenogram taken during the tenth postoperative week. Cast and Steinmann pin have been removed, mobilization of hip and carefully graduated weight bearing instituted. Bony union has already occurred.

A transverse intertrochanteric osteotomy is done at or near the level of the lower border of the remaining femoral neck (Fig. 1). This level is one-half to one inch above the lesser trochanter. If the shaft cannot be drawn down from a position of marked proximal displacement the osteotomy may need to be done somewhat lower. In such cases a period of skin traction preoperatively is useful in correcting this proximal contracture. Above the transverse osteotomy lie the greater trochanter and a portion of the femoral neck base. Any remaining femoral neck is resected (shaded area in Fig. 1), leaving the greater trochanter free to be transplanted, and facilitating adduction of the head. The resected portion is cut into chips

to be used later if desired between or around the junction of the femoral head and shaft.

The femoral head is rotated medially (adduction) until the fracture surface faces distally and lies in the transverse plane of the body. This is usually accomplished with ease, but occasionally necessitates severing numerous marginal adhesions. These adhesions exist between the periphery of the head and the acetabular margin and must be cleanly excised. If fragmentary remains of the neck project from the head they should be removed. The head does not tend to dislocate when rotated to the transverse plane.

By traction and lateral pressure the femoral shaft is pressed medially until it lies directly beneath the head (Fig. 1). Thus the fracture sur-

the internal fixation may also be removed at this time. When a Steinmann pin is used and its lateral end incorporated in the plaster the pin should be withdrawn when the cast is removed. Mobilization of the hip joint and carefully graduated weight bearing are instituted. Bony union may be expected early but whether or not it occurs is not of clinical significance due to the absence of shearing stresses. The pressure stresses incurred in weight bearing serve to stimulate the healing response, if bony union is delayed.

The reconstruction operation that has been presented was designed for the treatment of ununited



Fig. 6. Roentgenogram taken six months after operation. Note restoration of hip architecture. Patient has an excellent range of painless, stable motion, good endurance, walks without a limp, and has only $\frac{1}{4}$ inch shortening in the extremity.

face of the head is given a well vascularized bed upon the upper femoral diaphysis. With the extremity in slight abduction the greater trochanter is mobilized and set laterally against a denuded area on the femoral shaft just distal to the transverse osteotomy (Fig. 1).

Internal fixation for osteosynthesis of the femoral shaft, head and greater trochanter may be by whatever means the operator desires; e.g., one or more Steinmann pins, Smith-Petersen pin, Knowles' pins, Moore pins, or a bone graft. A Steinmann pin inserted through the greater trochanter, shaft, and then well into the head has proved simple and effective. The wound is closed in layers in the usual manner.

If osteoporosis is not extreme and the internal fixation is adequate, external immobilization is unnecessary. When internal fixation is insecure, a plaster hip spica cast should be applied with the hip in 20 degrees abduction. Wide abduction of the hip is not indicated. If a cast has been applied it may be removed after eight weeks. If desired

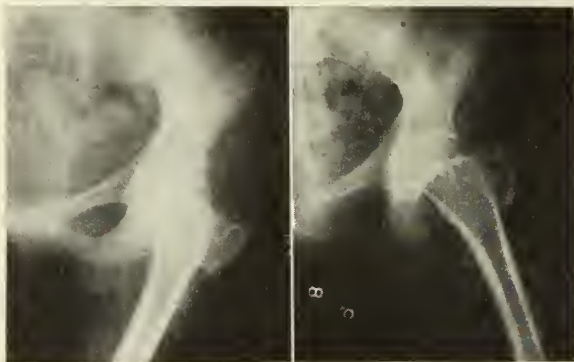


Fig. 6. To show relation of femoral head to acetabulum when hip is in adduction and abduction. Note that there is no tendency for the head to dislocate when adducted.

fractures of the femoral neck accompanied by partial or total resorption of the neck. This operation is contraindicated in the presence of: first, a non-viable or disintegrated femoral head; and second, disabling arthritic changes in the hip joint. A reconstruction of the hip in the presence of a necrotic, disintegrated or arthritic femoral head should be either of the Colonna or the Whitman type. In these two operations the femoral head is removed and discarded.

COMMENTS

Our experience with the operation is still too brief to be a basis for conclusions, but given an adult patient, young or old, in average good general condition, in whom the operation is indicated we expect:

1. No surgical shock.
2. Resoration of approximately normal hip architecture and mechanics.
3. Bony union.
4. Restoration of a good range of painless, stable hip joint motion.
5. Less than one inch shortening in the extremity.

When a substantial number of patients have been operated upon and adequately observed, end result studies will be reported.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

ENDOMETRIAL HYPERPLASIA

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Benign hyperplasia of the endometrium is a relatively common condition, but apparently its true significance is not fully appreciated by all surgeons. Among surgical specimens received at the laboratory it is most frequently observed in uterine curettements, but not uncommonly it is the only lesion in uteri which have been removed. A review of the latter group of cases indicates that in some instances on the basis of unusual uterine hemorrhage, hysterectomy has been performed. Apparently no effort had been made to determine the underlying cause, or in other words to make a diagnosis. Since some of the women were in the childbearing age it is obvious that in such instances at least the uteri were needlessly sacrificed. The purpose of this article is to emphasize the necessity for making exact diagnoses in cases of this type and to review briefly the modern concept of endometrial hyperplasia. The following case is cited because it is fairly typical of several cases in our series.

CASE REPORT

The patient, a white woman thirty-seven years of age, was admitted to the Finley Hospital on May 29, 1938, because of irregular uterine hemorrhage.

Family History: The patient's father, mother and two brothers were sixty-two, fifty-eight, forty-two and thirty-three years of age respectively, and all were well. Her husband, forty years of age, and two sons, twelve and ten, were well.

Past History: Aside from measles, chicken pox and a rare sore throat and cold, the patient had always been well. Her pregnancies and deliveries were normal. There had been no miscarriages. Her menstrual periods had always been regular, painless and of normal duration until the onset of her present illness.

Present Illness: About two years before admission the patient noticed that her menstrual periods were prolonged and that bleeding was excessive. One year later slight bleeding began to occur between periods. At first this happened only once in three months but gradually increased in frequency and during the last month before admission had been almost continuous. The bleeding between periods had never been great.

Physical Examination: The patient was well developed and nourished and did not appear ill. The head examination was essentially negative. Several teeth were filled and the mouth hygiene was good. The thyroid gland was barely palpable. The breasts were pendulous and no masses could be palpated. The lungs and heart were negative to percussion and auscultation. The abdomen was moderately obese. On palpation no masses, points of tenderness or muscle rigidity could be felt. The skin, extremities and nervous system were negative. On vaginal examination the cervix showed an old tear, but the mucosa was pale and smooth. The body of the uterus was slightly enlarged, but no definite masses could be made out. The adnexa were negative.

Laboratory Examination: Several urinalyses showed a faint trace of albumin, were negative for sugar, acetone and bile and the specific gravity varied between 1.016 and 1.024. The sediments showed only a very rare leukocyte and epithelial cell. The blood examination was as follows: red blood count, 4,246,000; hemoglobin, 74 per cent (Sahli); white blood count, 7,400, with 70 per cent polymorphonuclears.

Preoperative Diagnosis: Fibroids of the uterus.

Operative Note: The uterus was very slightly enlarged and felt less firm than usual. The ovaries showed several follicular cysts, but no corpus luteum cysts could be made out. The left tube and ovary and the uterus were removed.

Pathologic Diagnosis: Grossly the specimen was a moderate sized uterus with one tube and ovary. The latter showed follicular cysts. On opening the uterus large polypoid masses of endometrium filled the cavity, but showed no evidence of invading the myometrium. Two fibromas measuring three and six millimeters in diameter were seen in the wall. The cervix was smooth and glistening. (Fig. 1.) Microscopically the sections showed polypoid hyperplasia of the endometrium. The glands were large and the epithelium, which was adult in type, tended to infold into the lumen, but there was no evidence of malignancy. The stroma was moderately increased and edematous. The sections of the fibroma were typical.

Anatomic Diagnosis: Polypoid hyperplasia of the endometrium; fibromas of the uterus.

Comment: The clinical record of this case indicates that on the basis of a history of irregular uterine bleeding and the finding of a slightly enlarged and boggy uterus, hysterectomy was performed. A curettage would have made the diagnosis more definite and possibly have effected a cure. Certainly if an exact diagnosis had been

made other forms of treatment might have been tried before the uterus was sacrificed. Several benign lesions, such as incomplete abortion, polyps, or a submucous fibroma, could have been the cause of the symptoms. Even more important is cancer of the body of the uterus which certainly should have been considered in the differential diagnosis. In all these conditions an accurate diagnosis can only be made by a diagnostic curettage, and this procedure should never be omitted unless the diagnosis is evident on inspection or by bimanual pelvic examination.



Fig. 1. Photograph of the uterus. Note the polypoid masses of endometrium and two small fibromas in the myometrium.

DISCUSSION

Benign endometrial hyperplasia refers to an endometrium which is thicker than normal, but which shows no invasive tendency. It may form a smooth layer, may be thrown into coarse folds or polyp-like masses and the glands may tend to form small cysts. Microscopically both the glands and stroma are increased. The former are usually lined by a single layer of columnar epithelium, but at times there may be some infolding into the lumens. Because of the increased stroma which separates the glands the tissues have a swiss-cheese pattern which is characteristic of the condition. Associated with the endometrial changes is an absence of functioning corpora lutea and the presence of follicular cysts in the ovaries. Benign

hyperplasia may be encountered at any age from puberty until after the menopause. Thus Schröder¹ found from eight to nine per cent of his patients between sixteen and twenty years of age; eight to nine per cent between twenty and thirty-seven years; and 82 to 84 per cent were thirty-seven years of age or older.

Etiology: In 1915 Schröder² described the characteristic ovarian and endometrial changes in a series of thirty-one cases. These consisted of an absence of corpora lutea, and the presence of numerous follicular cysts in the ovaries associated with benign hyperplasia of the endometrium. He believed that stimulation by the persistent follicles and the absence of the luteal secretion explained the hypertrophy of the endometrial glands. With the knowledge of the several hormones concerned with menstruation which has been acquired since his work, Schröder's concept has been generally accepted. However, as in endocrinology in general, there is still much to be learned in regard to the interrelationships of the several organs of internal secretion. It is also true that the exact mechanism of the bleeding has not been determined. Whether this mechanism is the result of a decrease in the level of estrin (Burch and Burch³), the localized areas of necrosis (Mikulicz-Radecki⁴), or the increased permeability of the blood vessels (Novak⁵) is for the future to determine. In this connection it is well to remember that benign hyperplasia may occur without abnormal bleeding.

Treatment: In considering treatment it should be realized that the endometrial changes are secondary to those in the ovary and they in turn may result from dysfunction of the pituitary and thyroid glands. Therefore, before local treatment is started the physician should have a complete knowledge of the patient's constitutional make-up. It is also obvious that more conservative methods should be used in young patients than in those nearing the menopause. In each group it is true that hysterectomy will rid the patient of the primary complaint, but in some cases this can be accomplished by less drastic methods. Since the ovary is the primary cause of the symptom of bleeding, certainly it would be more logical to treat the ovarian pathology than to remove the uterus, although this may be necessary in some cases. Certainly hysterectomy should not be done without an exact diagnosis and this requires diagnostic curettage. Indeed this procedure is curative in a fairly high percentage of cases. In adolescents and younger women various organic extracts have been utilized in the treatment of benign hyperplasia. For some time thy-

roid extract has proved beneficial in the hands of many clinicians. In recent years more attention has been given to therapy by the several hormones associated with menstruation and placental extracts as well as by the so-called anterior pituitary luteinizing principle of pregnancy urine. The results have been variable, but with improvement in the isolation of the hormones and the increasing knowledge of their effects and interrelationships it seems likely that their value will greatly increase in the future.

Estrin is contraindicated, but oddly enough has been known to stop uterine bleeding. Possibly this is because the diagnosis was incorrect. Progestin is of too recent origin for a proper evaluation to be made of its use at this time, but the few reports which have appeared are encouraging. The anterior pituitary luteinizing principle of pregnancy urine has been used more extensively, and while there is some disagreement as to its value, very favorable results have been reported by Smith and Rock⁶ and by Novak.⁷ Because of their success it seems well worth a trial in women under forty years of age.

Snake venom therapy has been beneficial in the control of the hemorrhage. It probably acts by constricting the blood capillaries and possibly by decreasing the clotting time of the blood. Desiccated anterior pituitary and parathyroid extracts as well as insulin have also been utilized with some success in small series of cases.

The stimulation of the ovary and pituitary by low dosage radiation (x-ray or radium) is another method of treatment which has been successful in isolated cases. In spite of the intelligent use of all these various agents some cases in all age groups will remain refractive. In such cases radium therapy in adequate dosage (1200 to 1500 milligram hours) or hysterectomy will be necessary. In women approaching the menopause, radium therapy is the treatment of choice. The advantage of surgery lies in the fact that some other pathologic condition causing the uterine bleeding might be discovered and corrected.

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ADDITIONAL INFORMATION ON PROPHYLACTIC MEASURES

It has come to our attention that the editorial published last month on "Useful Prophylactic Measures in the Common Contagious Diseases," carried some misleading statements, which might lead to a misinterpretation of facts. For that reason we are glad to publish the following information from the Iowa State Department of Health:

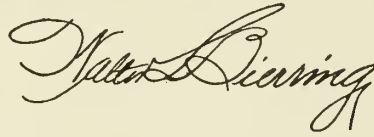
"During the past two years the State Department of Health (not the State Board of Health, as was previously stated) has processed and distributed, without cost, upon request of licensed physicians, convalescent serum (each pooled) for measles, scarlet fever and poliomyelitis. No fee has ever been charged, although where the economic status permits, contributions to the donors' fund are accepted. It should be noted that the Iowa State Department of Health is the only state health department in the country which is processing and distributing convalescent serum. Within the past year, the Department has also processed and distributed small quantities of convalescent serum for Rocky Mountain spotted fever and tularemia."

"The United States Public Health service recommends the multiple pressure method for smallpox vaccination, as well as the acupuncture procedure which was described in the previous article. The former method is now much more generally accepted in preference to the latter, because with it there is much less chance of drawing blood, and the percentage of 'takes' is as high, and usually higher."

MEDICAL OPENINGS IN CCC

Word has been received of vacancies existing in the medical service division of the CCC for the state of Iowa. The administration prefers Medical Reserve Corps officers, but can accept physicians not eligible for the Medical Reserve Corps on a contract basis. Officers up to and including the rank of captain are the only ones which can be used from the Medical Reserve Corps. As mentioned before, these vacancies occur in various of the thirty camps situated here in Iowa. Remuneration for reserve officers is base pay: that for the contract surgeon is determined by age and experience. To be eligible to enter into a contract for this service, one must be a regularly licensed physician in the state. It is requested that those interested communicate as soon as possible with the District Surgeon, Iowa District CCC, Fort Des Moines, Iowa.

STATE DEPARTMENT OF HEALTH



Regarding Venereal Disease Reports

By telephone, by letter and by spoken word, requests come to the attention of the Division of Venereal Disease Control concerning the method of handling venereal disease reports, the obtaining of antisyphilitic drugs, and the laboratory services furnished to physicians at the State Hygienic Laboratory, Iowa City. Judging from these numerous requests, and from the percentage of incomplete venereal disease reports submitted to the State Department of Health, it is mandatory that an explanatory word or two be set forth concerning these problems.

Antisyphilitic Drugs.

For the past year the department has furnished free drugs for any case of syphilis, regardless of the stage of disease or economic status of the patient, providing said case has been reported to the State Department of Health. In exchange for this free service, the department reserves the right to request a complete report on each case and not one which merely designates the case as being one of syphilis or gonorrhea. In supplying free antisyphilitic drugs to the practicing physicians throughout the state, this department neither implies nor infers any further obligation or duty on the part of the doctor other than that the case be reported. Drugs available through the State Department of Health are as follows:

1. Neoarsphenamine of standard make in doses of .45 and .60 grams.
2. Arsenoxide (Mapharsen) in doses of .04 and .06 milligrams.
3. Distilled water, ten cubic centimeters with each dose of neoarsphenamine or mapharsen.
4. Bismuth subsalicylate in oil, one grain per cubic centimeter and in 30 cubic centimeter containers.

Other drugs especially recommended in the treatment of various phases of syphilis are not

furnished by this department. Among these are: tryparsamide, water and oil soluble bismuth and stovarsol. Similarly, no drugs are furnished the practicing physician for the treatment of gonorrhea.

Concerning the Source of Infection.

Several important items in the average case report are disregarded so consistently that a word concerning them is in order. In naming the source of infection and contacts, the hope is entertained by the Division of Venereal Disease Control that such statements as "sexual intercourse," "off a toilet seat," "claims he does not know," will diminish in the near future. A person either does or does not have a venereal disease. If he has a venereal disease, the chances are about nine out of ten that it was acquired by sexual play and not by accidental transmission. It is the duty and opportunity of the physician, whether in private or hospital practice, to learn where the patient acquired his infection. There is as much justification for the private physician to discuss exposures and contacts with the syphilitic patient as there is for him to investigate all known exposures of a case of active pulmonary tuberculosis. It is only by a consistent application of this idea that syphilis will eventually be brought under control. The current campaign must certainly go beyond the present attitude of treating only those who are infected and who go, voluntarily, to a doctor's office. We must be able to find those numerous patients in the infectious stage, who have not as yet signified their willingness to submit to treatment.

Reporting by Initials and Date of Birth.

Another thing which should be kept in mind in filling out a report of a case of venereal disease is that the State Department of Health does

not require the full name, but rather, the initials of the patient and the date of birth.

Trustworthy Data Dependent Upon
Physicians' Reports

Frequently requests are received from physicians over the state, asking for information such as: the case rate of syphilis or gonorrhea, the stage of the average case at time of report, etc. These and similar questions cannot be answered intelligently until the reporting of cases and filling out of the case reports on the part of the doctors are more thorough-going.

Services of the State Hygienic Laboratory

The State Hygienic Laboratory at Iowa City, a division of the State Department of Health, furnishes free laboratory service to all physicians, including such procedures as: flocculation and complement fixation tests, examination of spinal fluid, examination of smears for gonorrhea, etc. (There is a charge of \$1.00 for the colloidal gold test on spinal fluid.) It is requested that when a blood specimen is submitted to the laboratory, it be sent in under the true initials or name of the patient, or listed under the same initials as when reported to the State Department of Health. The use of numbers, codes and undecipherable symbols is to be discouraged. No attempt is made at any time by the State Department of Health to undertake investigation of anyone with a positive blood test for syphilis or a positive smear for gonorrhea, without first obtaining the permission of the physician in charge.

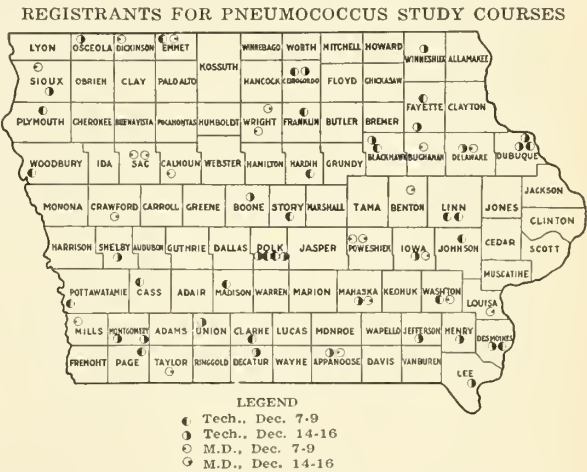
In conclusion, the Division of Venereal Disease Control wishes to express appreciation to attending physicians for their interest in the reporting of cases in the past, and for the spirit of cooperation shown in case finding and case holding work.

SPECIAL PNEUMOCOCCUS STUDY COURSE

In the November issue of the JOURNAL, page 569, announcement was made of a laboratory course for the study of the pneumococcus, to be conducted under the direction of M. E. Barnes, M.D., Director of the State Hygienic Laboratory, Medical Laboratories Building, Iowa City. Due to the many applications for registration of laboratory workers and physicians desiring to become more thoroughly familiar with the diagnostic procedure for type determination of pneumonia, it has been found desirable to arrange for a second course one week following the first. Course One is scheduled for December 7 to 9; Course Two

will extend from Wednesday through Friday, December 14 to 16.

The accompanying spot map shows the distribution by counties of persons registered at this time (November 28) for special study of the pneumococcus at Iowa City. Registrants for Course One include twenty-six technicians representing twenty-



ty-two hospital and other laboratories, and eleven physicians. Laboratory workers thus far registered for Course Two total twenty-four, the number of physicians being nine.

The Pneumococcus Study Course will be of special value to all those who attend; such study likewise promises to make more effective the carrying out of diagnostic and other control measures against pneumonia in the various counties in Iowa.

It is hoped that as many hospital and laboratory workers as possible may take advantage of the Pneumococcus Study Course, arrangements for which have been made at Iowa City. Additional information and a form for registration may be had by writing to the State Department of Health, Des Moines, Iowa. In case applications justify the arrangement, a third course may be given early in January, 1939.

PREVALENCE OF DISEASE				Most Cases Reported From
	Oct. '38	Sept. '38	Oct. '37	
Diphtheria	74	47	14	Black Hawk, Scott, Webster
Scarlet Fever	205	89	309	Polk, Black Hawk, Woodbury
Typhoid Fever	17	19	33	Cerro Gordo
Smallpox	4	11	20	Cass, Cherokee, Decatur, Marshall
Measles	51	16	12	Mills, Woodbury
Whooping Cough	61	75	188	Boone, Linn, Woodbury
Epidemic Meningitis	2	3	4	Iowa, Linn
Chickenpox	81	16	106	Woodbury, Hardin, Black Hawk
Mumps	32	24	63	Dubuque
Poliomyelitis	6	9	46	(For State)
Tuberculosis				
(Pulmonary)	120	59	71	(For State)
Undulant Fever	12	7	7	(For State)
Gonorrhea	163	201	232	(For State)
Syphilis	265	237	394	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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OFFICE OF PUBLICATION, DES MOINES, IOWA

Vol. XXVIII DECEMBER, 1938 No. 12

PEACE AND GOOD WILL TOWARD MEN

I have seen those who have striven and found pleasure in the striving. I have seen those who labored and were richly rewarded in goods. I know men who have gained titles and sit in seats of honor, and number in my acquaintance, those who have acquired wealth so that more is not desired. But, among all of these, with their striving and achieving, only those have attained real success who have had time to find the peace and a genuine love of their fellowmen.

As this holiday season rolls nearer and our thoughts are diverted from the mistrust and suspicion of a belligerent world, can we with sincerity examine our hearts and find there peace and good will toward men? Has this striving caused unrest and so calloused our conscience that the mouth belies the heart, when at Christmastime we lustily proclaim "Peace and Good Will Toward men"? He has truly attained success who has sought to serve and perchance in serving, achieved honor and position, but who withal has cherished his fellowmen. Peace is assured to such a man since in his life the true spirit of Christmas lives. At this holiday season, I beseech our benevolent patron, St. Nicholas, to grant that you and I may say with sincerity—

"PEACE AND GOOD WILL TOWARD MEN."

PROGRAM FOR MEDICAL CARE OF FARM SECURITY ADMINISTRATION CLIENTS IN IOWA*

Early in January of this year the Farm Security Administration discussed with the Medical Economics Committee of the Iowa State Medical Society a proposed plan for the medical care of their clients in Iowa. The major provisions of that plan were approved, but exception was taken to the provision that the funds for each individual were to be segregated, used only for that individual, and returned to him if not used, while the medical profession agreed to care for the family through the entire year even if the amount of money provided was entirely inadequate. This was, in effect, supplying medical care to an individual for a set sum, without the benefit of the insurance principle of using the contributions of the whole group to pay for the needs of the members of the group who happened to require the services during any one year. It was felt that this would not work, and in a trial in one county it did prove to be unsatisfactory.

During the last month there have been several conferences between the members of the Medical Economics Committee and various officials of the Farm Security Administration in an effort to work out a more equitable scheme for furnishing medical care to this low income group of farm families. In developing the plan, it was necessary to consider that this group consists of farmers who are bordering on relief, who are unable to obtain funds from any source except the governmental agency, and who have formerly been cared for through the generosity of the medical profession without any remuneration for services rendered. These families are not relief families; they are all actively engaged in farming, and have their whole year's program arranged for them through the cooperation of the farm and home management advisors of the Farm Security Administration. The funds which they can raise for medical care are limited and this has been considered in setting up the rates for this first trial year.

Dr. F. V. Meriweather of the United States Public Health Service, who is directing the medical work for the Farm Security Administration in this region, was very helpful in working out the plan, and at all times insisted that insofar as possible the entire conduct of the plan for provision of services and payment therefor be left in the hands of the individual county medical society. It is granted that we have no definite knowledge of the exact amount of money which

*From the Medical Economics Committee.

will be necessary to provide medical care for this rural group, and at the same time establish a fair remuneration for the medical man who provides the care. This year we are setting up a sum, which has been determined by a study of the financial condition of these clients, consideration of the degree of success of a similar scheme in Oklahoma, and our experience with the costs of providing medical care for those on relief in Iowa over the last few years. In one state, where a similar plan has been used for a full year, it has paid 72 per cent of the regular charges as they would have been if made on the usual fee schedule.

Each county society secretary has received a copy of the plan as developed by the Medical Economics Committee, together with some of the recommendations which have come from counties in working out their relief problems. It is hoped that each society, even if it does not decide to cooperate in the program, will study the plan, discuss it thoroughly, and watch its workings in counties where it is put into operation. From all these schemes, it is desired to accumulate experience and data making it possible to develop plans for some type of indemnity insurance for medical care, which can be offered to other groups, not under governmental subsidy or control.

This plan provides for ordinary medical care, emergency surgical care and hospitalization. The client will pay to the county medical society, or its designated representative, a sum of money depending on the size of the family. This money will be pooled by the society for the care of the whole group. It is to be divided into twelve equal sums for use during the months of the following year. Each month the physicians cooperating in the program will submit their bills for services rendered the clients of the Farm Security Administration. These bills will be checked by the committee of the county society appointed for the purpose, and will be allowed and paid as far as the funds are available. If, in any month, there is more money than necessary to cover the current bills, it will be set aside to accrue until the end of the year, and then used to adjust the bills which have not been paid in full during the year. If any surplus should remain, it will accrue to the county medical society and may be prorated among the physicians cooperating in the plan. Not included in the medical plan, because of the low payment provided for, are the care of such conditions as hernia, tonsillectomies, perineal repairs and other chronic conditions, except as they may become emergencies due to complications. Scrums, insulin,

vaccines and expensive drugs are not furnished. These should be obtained where possible from the State Department of Health or other similar agencies at no cost. If not so obtainable the Farm Security Administration will, on request, make provision for them either through a supplementary loan or grant to the client.

In some counties where there are larger centers of population, the working of this plan will not in any way affect the men living in the cities. However, in some of these counties, such as Woodbury, there is a large group of farmers who are clients of the Farm Security Administration, and the medical care of this group is of sufficient volume to be of great interest to the doctors in the smaller towns of the county. In some cases the doctors in the small towns may be the only ones who will need to cooperate in the program, since they will be the normal medical attendants of those farmers who are under supervision of the Farm Security Administration and these men may desire to accept the program for the individuals in their territory. The Medical Economics Committee requests the hearty cooperation of the various county societies in the consideration of and participation in this plan. It is granted that it is not perfect, but a year's experience, with the information it will bring, will enable us to work out the plan which will be adequate and which will give these low income farm clients medical service within their ability to pay.

THE MEDLAR NEUTROPHILIC INDEX

The Medlar neutrophilic index is being used more and more widely as a prognostic factor in connection with pulmonary tuberculosis. This test is based on the neutrophile-lymphocyte ratio as determined from the differential blood count, taking into consideration also the total white corpuscle count and the monocyte count.

Originally Medlar stated "The typical tubercle without giant cell formation or caseation is the first reaction to the tubercle bacillus. This is formed by the mononuclear leukocytes with practically no participation of the neutrophile. If the infection is overcome with but little damage to the tissues, lymphocytes appear in the healing stage. If there is considerable necrosis of tissue in the individual lesions, the neutrophiles congregate in smaller or larger numbers." In other words, "the monocyte represents tubercle formation, the neutrophile represents tubercle undergoing abscess formation, and the lymphocyte represents the healing phase of the tuberculous lesion."

Medlar determined the actual number of neutrophiles, lymphocytes and monocytes per cubic millimeter by multiplying the differential percentage by the total white cell count. He determined and described three types of leukocytic pictures, the septic, hyperplastic and non-septic types. The normal blood picture of an inactive tuberculosis was thought to be one in which the neutrophiles were not over 5,000 cubic millimeters, the lymphocytes at least 2,000, and the monocytes not over 700 per cubic millimeter. Later the total white count and monocyte count were taken into consideration together with the neutrophile-lymphocyte ratio. Ideally, in a case of inactive tuberculosis the lymphocytes will number almost, if not entirely, as many as the neutrophiles. If the neutrophiles increase as lymphocytes decrease, an unfavorable ratio is the result.

The numerical index (which is computed on a mathematical basis from the blood examination) is a number which may be used as an indication of the activity of the tuberculosis in a given case at a given time. However, it must be remembered that the index should be computed only if the condition is proved to be tuberculosis. It should be stressed that one blood examination does not carry any particular weight. The trend of several blood examinations is much more important in truly judging the condition of activity of the disease process in the patient. In addition it should not be forgotten that other disease complications will affect the blood count and also the resulting ratio. Many times, by using such a blood examination, reactivation in a tuberculous patient may be foretold, in some cases even before x-ray evidence is manifest, and in many cases, before other physical findings are present.

The various factors involved in the computation of the Medlar index are given below. The neutrophile-lymphocyte ratio is determined, and if the $\frac{N\%}{L\%}$ is less than $\frac{2}{1}$, the formula used in computing the factor is $\frac{(N\%)}{(L\%)} - 1 \} 20$. This results in the following mathematical progression:

Ratio	$\frac{1}{1}$	$\frac{1.1}{1}$	$\frac{1.2}{1}$	$\frac{1.3}{1}$	$\frac{1.4}{1}$	$\frac{1.5}{1}$	$\frac{1.6}{1}$	$\frac{1.7}{1}$	$\frac{1.8}{1}$	$\frac{1.9}{1}$	$\frac{2}{1}$
Ratio value	0	2	4	6	8	10	12	14	16	18	20

If the $\frac{N\%}{L\%}$ ratios are above $\frac{2}{1}$ (unfavorable range) the formula used is $\frac{(N\%)}{(L\%)} \} 10$. This results in the following progression:

Ratio	$\frac{2}{1}$	$\frac{2.1}{1}$	$\frac{2.2}{1}$	$\frac{2.3}{1}$	$\frac{2.4}{1}$	$\frac{2.5}{1}$	$\frac{2.6}{1}$	$\frac{2.7}{1}$	$\frac{2.8}{1}$	$\frac{2.9}{1}$	$\frac{3}{1}$
Ratio value	20	21	22	23	24	25	26	27	28	29	30

Factors are derived, based on leukocytosis over 10,000 or leukopenia under 6,000, and on a monocyte count of over ten per cent, as shown in the following table:

Abnormal Monocytes	Leukocytosis	Leukopenia	Equivalent $\frac{N\%}{L\%}$ ratio	Equivalent $\frac{N\%}{L\%}$ value
11%	11,000	5,000	$\frac{1.1}{1}$	2
12%	12,000	4,500	$\frac{1.2}{1}$	4
13%	13,000	4,000	$\frac{1.3}{1}$	6
14%	14,000	3,500	$\frac{1.45}{1}$	9
15%	15,000	3,000	$\frac{1.6}{1}$	12
16%+	16,000+	2,500—	$\frac{1.75}{1}$	15

The resulting index is the sum of the ratio value found in the neutrophile-lymphocyte ratio, plus the factor representing abnormal leukocytosis or leukopenia, plus the factor representing the monocyte count of eleven per cent or more. Ideally, an inactive case would show an index of 0. An index of 1 to 15 is favorable, 15 to 20 is slightly favorable, 20 to 25 is slightly unfavorable; 25 to 35 is unfavorable, and 35 and above is increasingly more unfavorable. The following three examples illustrate the method:

Example 1.

Neutrophiles	60%	$\frac{60}{30} = \frac{2}{1}$	20
Lymphocytes	30%		
Total white blood count.....	8,000		0
Monocytes	8%		0
Leukocytic Index			20

Example 2.

Neutrophiles	55%	$\frac{55}{27.5} = \frac{2}{1}$	20
Lymphocytes	27.5%		
Total white blood count.....	8,000		0
Monocytes	15%		12
Leukocytic Index			32

Example 3.

Neutrophiles	56%	$\frac{56}{28} = \frac{2}{1}$	20
Lymphocytes	28%		
Total white blood count.....	15,000		12
Monocytes	15%		12
Leukocytic Index			44

Aiming Low for a New High

Aiming low for a new high sounds like a paradoxical objective. Yet that is just what the National Tuberculosis Association and its some 1,500 affiliated state and local associations are doing; they are striving to bring about a new low death rate from tuberculosis. The number of deaths from this disease has been constantly decreasing during the last thirty years and it is believed that with continuous effort tuberculosis eventually can be eradicated.

With the funds raised by the sale of Christmas Seals, now being sold for the thirty-second consecutive year, tuberculosis associations have been instrumental in creating a nationwide machinery to combat the insidious sickness which for many years was the leading cause of death in the United States.

Let us review some of the results which comparatively small sums of money raised in hundreds of local communities have helped to bring about. Today there are 1,200 institutions, sanatoria and hospitals, providing 95,000 beds for the treatment of tuberculosis patients. Over 10,000 public health nurses devote their energies to tuberculosis work. There are 1,000 clinics where men, women, and children may go for advice and diagnosis. Well-organized rehabilitation work is conducted in many parts of the country, while medical research is making valuable contributions to our knowledge of the tuberculosis germ and its effects upon mankind.

The public today knows much more about the prevention and treatment of tuberculosis than it did thirty years ago. Because of this we believe the tuberculosis associations are not too optimistic in aiming for a low death rate, which will mean a new high spot in accomplishments. We even go so far as to believe with them that the new "high" will some day approach the zero mark.

At the present time, the Iowa Tuberculosis Association and its affiliated county organizations are devoting the major part of their Christmas Seal resources to work for the early discovery of cases of the disease. The "Cooperative Case-

CHRISTMAS SEALS



**Help to Protect Your
Home from Tuberculosis**

Finding Program," financed jointly by the tuberculosis associations and the State Department of Health, is directed at the examination of persons who have been in intimate contact with a case of tuberculosis. This program serves primarily the "rural" counties of the state. Similar work is carried on in the more populous counties by local associations and committees.

At this time, seventy-seven county tuberculosis associations and Christmas Seal committees have given their support to the Cooperative Program, or are planning to do so with funds from the 1938 Seal Sale. Approval has been given up to this time by medical societies in

fifty-seven counties. During the twelve-month period ending November 30, 1938, programs were completed in forty-four counties.

To insure the use of local Christmas Seal funds for anti-tuberculosis activities, as well as to give more permanence to local organizations, the Iowa Tuberculosis Association during the past several years has organized county tuberculosis associations in eighteen counties (Adams, Black Hawk, Boone, Bremer, Cerro Gordo, Clay, Clayton, Delaware, Des Moines, Hardin, Johnson, Keokuk, Kossuth, Marshall, Montgomery, Plymouth, Polk and Winneshiek). No association has been established without the support and representation of the county medical society. In addition to insuring better direction in fund-spending, these organizations therefore have resulted in improved understanding between the interested groups.

To the Christmas Seal campaign goes the credit for making possible the education of the public in matters pertaining to the prevention and cure of this deadly disease, as well as the actual building of institutions in which to treat the unfortunate victims of tuberculosis. Laymen and physicians alike may share in continuing this march toward the ultimate eradication of tuberculosis, and it is hoped and expected that the 1938 Christmas Seal sale campaign will repeat its success of former years.

The Iowa Cooperative Case Finding Program*

C. K. McCARTHY, M.D., Director

The past fifteen years have seen a continued decline in the death rate from tuberculosis throughout the United States. This has taken place in spite of unemployment and the consequent lowered standard of living for thousands of our people. The decline has not been due to the discovery of a specific cure for tuberculosis. There is no known vaccine or serum, as there is for so many other types of infectious diseases, which will immunize against or cure tuberculosis. The present situation is solely the result of a concentrated effort upon the part of physicians and health organizations to eradicate this deadly enemy.

The campaign was launched from a variety of angles, each of which has had its particular value. There has been the attempted education of the public, especially with respect to the manner in which the disease is spread. There have been the pasteurization of milk and the more careful handling of other articles of food. There has been the building of more sanatoria for the segregation and care of those ill with tuberculosis, and there has been the application of modern methods for treating the disease. These efforts have been of inestimable value in the fight against tuberculosis, but the most valuable single factor, from the standpoint of prevention, in the entire campaign has been the adoption of the x-ray tuberculin method of finding early cases. This method has been applied under various plans in different parts of the country, one of the most popular having been the testing of school children. Such a plan was initiated by the Massachusetts State Department of Public Health in 1924. Before proceeding with the actual testing the workers launched an educational campaign. They talked to groups of physicians, school and public health nurses, teachers, parent-teacher groups and clubs. There were announcements in churches and notices put in papers. The clinics were then organized and continued over a ten-year period. During the years several changes were made in the original plans, as various facts became evident. One of the most outstanding discoveries Dr. Chadwick has reported, was that the use of the stethoscope on most children was a waste of time, since it rarely revealed signs of tuberculosis even when the disease

was present. After the first five years the plan consisted of first, a tuberculin test to find the infected children; second, an x-ray of the positive reactors; and third, a physical examination of only those patients who showed evidence of disease. During the ten-year period more than 18,000 tuberculous children were discovered. At the end of the ten years the work was continued under the county and state sanatoria.

There can be no question as to the great value of a project such as the one just discussed. However, it is felt by many today that the most valuable features of such a program should not be limited to school children, but should be made applicable to the population as a whole. In the first place, school testing did not necessarily include the teachers. It is true that in some states there have been requirements with respect to health certificates for teachers, but such requirements have been variable in different communities. They frequently required very superficial examinations and often were confined to new teachers coming into the community. If there is a greater hazard to a child than a teacher with an open case of tuberculosis and especially one who may be unaware that she has such a disease, we do not know what that hazard is. Certainly the danger is as great, if not greater, than having the child exposed to a case in the family circle. He probably will spend more hours a day in close contact with the teacher than he would spend in similar contact with the sick member of the family. In the second place, although in many parts of the country an effort has been made, upon finding cases of tuberculosis among school children, to examine all the household contacts, these efforts have not always been successful, because of erroneous methods of approach to those contacts.

Finally, the general practitioners have not always approved the tuberculin testing of school children. Opposition, either active or passive, upon the part of even one physician in a community, can do more to prevent the success of any health project than can any other known single factor.

The education of the public is essential wherever a health project is to be put into operation, but the success or failure of the plan depends upon

*Presented before the Mississippi Valley Sanatorium Association Conference, St. Louis, Missouri, September 22, 1938.

the manner in which an educational campaign is launched.

The Iowa Tuberculosis Control Service is so planned and so functions that it does not miss the infant, the child of pre-school age, or the child of school age. It does not miss the teachers, nor any persons who have had contact with a case of tuberculosis. Most important of all, it places the responsibility for the education of the public, not in the public press, not in the hands of enthusiastic but often misinformed laymen, but right in the hands of the family physicians who, working in conjunction with especially trained public health nurses, tell the people in the privacy of home or office the things they should know about tuberculosis. Of course the purpose of the program is to find, at the earliest stage possible, those persons who have been infected by tubercle bacilli as a result of close association with an open case of tuberculosis. We have three ways of locating such individuals: through reported morbidity, through reported mortality and through personal contact with the private practitioners. In the final analysis this means that we have only one way—through the doctors. It is they who make the morbidity and mortality reports which constitute our starting point. If physicians failed to do this we would have no starting place. However, Iowa physicians do not fail.

On the other hand, there is a point beyond which the private practitioner, because of a strict code of medical ethics, cannot advance unaided. He can report deaths from tuberculosis, he can report patients suffering from tuberculosis, he can direct others to those persons who are in direct contact with cases of tuberculosis, but he cannot go out and compel patients to come in to him. Here, then, is the point at which the Department of Health must rally to the support of the physicians and the purpose of this address is to explain how this is accomplished in Iowa.

Our personnel consists of a clinic director, a supervising nurse, tuberculosis field nurses, an x-ray technician, and a clerk. The equipment consists of a portable x-ray machine, and an x-ray laboratory. Never, under any circumstances, do we attempt to put our case finding service into execution in a county until the county medical society has invited us to do so. Such an invitation must be made in writing. Furthermore, it cannot be made until after the director, or some other staff member, has explained the program in detail to the county medical society. We feel it is extremely important that there shall be no misunderstanding upon the part of the private practitioners

as to just what the State Department of Health is trying to do. We make it clear that we are neither encroaching upon their private practice nor attempting to force upon them that specter which, at times, haunts all good doctors, the specter of state medicine.

Upon receipt of the invitation, the Tuberculosis Control Service sends one or more public health nurses into the county. The nurses are already armed with mortality and morbidity records for the county. Every physician in the county is visited and each directs the nurse to contact or suspected cases. The nurses are never permitted to call upon a single patient without the permission of that patient's doctor, unless, of course, the family doctor is not a regular member of the medical profession. The nurse visits these persons and explains the purpose of her call. Right here, we feel, lies the secret of a great deal of our success. We have already stated that erroneous methods of approach to contacts have been responsible for school testing not being one hundred per cent successful. Here the contacts have frequently been approached by the school nurse. We are not attempting to minimize the ability of the school nurse, but she has not been specially trained as our nurses have been for this particular type of work. It requires a great deal of special training plus a great deal of natural tact to go into the homes of people who do not, most of the time, believe they are ill, and persuade them that they are sick enough to see a doctor. Our nurses have been successful in getting between fifty and sixty per cent of all persons visited, to their family physicians. Let us repeat, "The success or failure of the plan depends upon the manner in which an educational campaign is launched."

The nurse visits these people, fills out a special medical history, then refers the patient to his physician for advice. If the nurse has done her work properly, the patient loses no time in getting to his physician where, in the privacy of his office, the doctor can explain to the patient the importance of finding out without further delay just what part he must play in the eradication of tuberculosis. The physician then proceeds to examine the patient and do a tuberculin test. We use the Mantoux test and the State Department of Health furnishes the material. The physician receives the sum of \$1.00 for doing the tuberculin test. This is paid by the Department of Health and is additional to the regular fee which the patient pays the doctor for examination. Two days later the test is read. If it is positive the doctor then explains to the patient that an x-ray of the chest is the

next step. If the physician is equipped to take this x-ray himself, or wishes to have it taken by some other physician in the community, he is at liberty to do so, provided the patient can pay for the procedure. However, if the patient is unable to pay for his x-ray, the physician tells him that he wishes him to have an x-ray of his chest at the special clinic which is scheduled to take place on a certain date at a local hospital.

The patient has now progressed to the point where he is determined to know the worst. Invariably he will appear at the x-ray conference on the day selected. Usually he finds his own physician there. *He is not subjected to any further examination on that day unless such examination is made at the physician's request and in his presence.* At no time is a single act perpetrated which could, for an instant, suggest to the patient that he is being taken out of the hands of his own physician. The x-ray films taken at the clinic are the property of the Public Health Department. They are interpreted in our office in Des Moines by the director and the interpretations, together with photographs of the pathologic films in miniature, and recommendations for further procedure are mailed to the patient's physician. Under no circumstances is any information ever given to the patient, or members of his family, except by the family doctor. The only forms to be filled out by the physician are those which show the results of the Mantoux tests and the vouchers for remuneration.

Our program has been in operation, actually, only since December, 1937. At the present time we are averaging a clinic a week. We have four field nurses. County nurses are also available in those counties where a full time public health service is in operation, thus making it possible to double the number of surveys being conducted in a given period. Thirty-four clinics have been held since December, 1937, at which 2,205 patients have been x-rayed, all of whom had positive Mantoux tests. It is too early for statistical studies of value. Fifty-seven counties have accepted the service to date. Not a single county that has asked for an explanation of the program has failed to approve it afterward. Primarily the program was intended to serve only those counties of the state having a population of 30,000 or less. We have eighty such counties in the state.

The mechanics of the Iowa Tuberculosis Control Service are very simple. The results in locating cases of tuberculosis are very gratifying. We do not claim that we find only early cases of tuberculosis. Many of our cases are of long standing

and are being reported for the first time, but is it not extremely important to find and isolate them in relation to contacts? On the other hand, we do not miss the early cases. We have already mentioned that tuberculosis in children is frequently accompanied by so few symptoms that early stages can only be detected by certain methods. Our service fulfills the requirements. We believe our program to be unique in that it is, so far as we know, the only statewide plan of its kind. Sponsored by the Iowa Tuberculosis Association and the State Department of Health jointly and conducted in cooperation with the local county medical societies it is founded on solid ground. The funds are derived from three sources. Each county Christmas Seal Committee appropriates about 30 per cent of the total amount. This amount is based upon the population of the county. The Iowa Tuberculosis Association adds 20 per cent and the State Department of Health adds the other 50 per cent. The State Department of Health, at present, derives its portion from Social Security funds, but hopes that the next legislature will make a special appropriation for this purpose.

The National Tuberculosis Association has always felt that its success has been due mainly to the fact that all plans have been carried through in close cooperation with the medical profession. The successful prevention and control of tuberculosis anywhere demands complete cooperation of the persons or organizations involved in the functioning of the control service. In the state of Iowa we have that cooperation to a very marked degree.

It is the function of the State Department of Health, in order to control diseases dangerous to public health, to make such rules and regulations as it deems advisable for their control. However, the Department of Health must depend upon the general practitioners of the state to see that these rules and regulations are enforced. Where would we be if the family doctors went on a "sit down strike" in this respect? The family doctor is the one man who is in direct contact with the people. If they will take the advice of any man they will take that of the doctor whom they have learned to love and trust. He is the only man who is in a position to explain to the people the reasons for the regulations made by the Department of Health. He does not need to compel acceptance in most instances; his advice is sufficient. The physicians of Iowa are certainly not staging any strikes in connection with our Tuberculosis Control Service. Their cooperation has been above criticism to date.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood

Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

Program Suggestions

The following suggestions are being given to aid those auxiliaries who wish to present programs on maternal and child health, and health of the adolescent:

I. Maternal and Child Health Program:

A. Care of the mothers

1. Prenatal examinations
2. Care during delivery
3. Postnatal care

B. Care of children from one to five years

1. Local milk supply
2. Immunization program
3. Safety measures
4. Health examinations regularly by family physician

C. References — From State Department of Health the following pamphlets may be obtained free on request:

1. Child from One to Six
2. Child Management
3. Good Posture in the Little Child
4. Infant Care
5. Minimum Standards of Prenatal Care
6. Why Sleep?
7. Mottled Enamel of Teeth
8. Accidents and First Aid
9. Control of Communicable Disease
(Individual pamphlets on the various diseases)

10. Sex Education in the Home

D. References—From the American Medical Association the following pamphlets may be obtained for fifteen cents:

1. Eyes and Vision
2. What Does the Baby Put in His Mouth?
3. Bad Habits in Good Babies

II. Adolescent Health Program

A. The school health program

1. Teaching of hygiene, biology, home economics and athletics
2. Physical examinations prerequisites for athletic competition

B. Recreation program

1. Group activities, such as 4-H clubs, etc.

2. Public amusement places, dance halls, motion pictures, camps, swimming pools, etc.

3. WPA or local tax-supported recreation program

C. References — From State Department of Health the following pamphlets may be obtained free on request:

1. Sex Education in School
2. Sanitation and Swimming Pools
3. Functions of Public Health Nursing

D. References—From the American Medical Association:

1. Health Inspection of School Children, ten cents
2. Age of Romance, twenty-five cents
3. Posture and Gait, fifteen cents

Auxiliary in Northwest Iowa Meets

Auxiliary members in northwest Iowa met for their fall session, Monday, October 31, at the home of Mrs. W. S. Balkema in Sheldon. Plans were made for a luncheon to be held in Rock Rapids early in the spring, prior to our spring meeting. All members were urged to try and get *Hygeia* magazine before the public as much as possible, by placing it in the doctors' offices and in the public libraries. Officers elected to serve next year are as follows: Mrs. W. Vander Wilt, Rock Rapids, president; Mrs. K. W. Myers, Sheldon, vice president; Mrs. Frank Reinsch, Ashton, secretary, and Mrs. W. S. Balkema, Sheldon, treasurer.

Mrs. Frank Reinsch, Secretary

Pottawattamie County

Mrs. M. C. Hennessy entertained members of the Woman's Auxiliary to the Pottawattamie County Medical Society, at dinner, Monday, October 31. The program consisted of a paper on socialized medicine, read by Mrs. E. L. Hawkins of Council Bluffs. Plans were completed for the book review, "The Yearling," to be presented by Mrs. Mildred Morrison Gearhart at Bloomer School, Friday, November 4, under the sponsorship of the Auxiliary.

Mrs. Walter Hombach, Secretary

SOCIETY PROCEEDINGS

Clinton County

The Clinton County Medical Society met Thursday, November 10, for its annual turkey dinner. The menu was prepared by Dr. Kurt Jaenicke, and all the trimmings, before and after, were present. It was announced that the next meeting of the organization would be the annual meeting, at which time officers for next year would be elected.

A. K. Meyer, M.D., Secretary

Dubuque County

J. G. Crownhart, executive secretary of the Wisconsin State Medical Society, will give a public lecture on Socialized Medicine and Sickness Care, Wednesday, December 14, at the Elks Club in Dubuque. The meeting is under the auspices of the Dubuque County Interprofessional Society. Mr. Crownhart spent several months in Europe studying the results of the socialization of medicine in England and Germany, and is the author of the recently published volume on "Sickness Insurance in Europe." All Iowa doctors and their lay friends are cordially invited to attend this meeting.

F. P. McNamara, M.D., President

Fayette County Annual Meeting

Officers elected at the annual meeting of the Fayette County Medical Society held in Oelwein, Tuesday, November 29, include: Dr. Howard Risk of Oelwein, president; Dr. C. M. Hazard of Arlington, vice president; Dr. Henry H. Wolf of Elgin, secretary and treasurer; Dr. Risk, delegate; and Dr. Hazard, alternate delegate. A feature of the meeting was the showing of motion picture films on Interposition of the Uterus, and Scaleniotomy for Cervical Rib.

H. H. Wolf, M.D., Secretary

Sac County

J. H. Stalford, M.D., of Sac City, furnished the scientific program for the Sac County Medical Society when it met Thursday, October 27, in Odebolt. His address was entitled Effects of Tobacco on the Adolescent. Dr. J. R. Dewey of Schaller reported on the special session of the State Society House of Delegates, and Dr. Roland Stahr of Fort Dodge presented a report of the national House of Delegates meeting.

Scott County

The Scott County Medical Society met Tuesday, December 6, in Davenport, at which time the guest speaker was Harry Oberhelman, M.D., associate clin-

ical professor of surgery at Rush Medical College, Chicago. Dr. Oberhelman spoke on The Role of Fibrocystic Disease in Cancer of the Breast.

Henry A. Meyers, M.D., Secretary

Washington County

The regular monthly meeting of the Washington County Medical Society was held Tuesday, November 29, in Washington. Following a six-thirty dinner Ruben Nomland, M.D., of the State University of Iowa, College of Medicine, gave a clinic on skin diseases. Several patients having various types of skin disease were presented by members of the society.

W. S. Kyle, M.D., Secretary

Woodbury County

N. J. Heckel, M.D., urologist, associated with the Presbyterian Hospital in Chicago, was speaker of the evening for the Woodbury County Medical Society at its meeting held in Sioux City, Friday, November 11. Dr. Heckel spoke on Pyuria—Its Causes and Treatment.

W. H. Gibbon, M.D., Secretary

Iowa and Illinois Central District Medical Association

The mid-winter meeting of the Iowa and Illinois Central District Medical Association will be held Friday, December 16, at the Le Claire Hotel in Moline, Illinois. A ten minute paper will be given by L. A. Dondanville, M.D., of Moline, on Preliminary Treatment of Traumatic Cases. Sumner L. Koch, M.D., of Chicago, will deliver an address on Some Surgical Principles Involved in Treatment of Injuries of the Hand; the discussion will be opened by W. C. Goenne, M.D., of Davenport, and E. B. Neff, M.D., of Moline. John P. Peters, M.D., of New Haven, Connecticut, will deliver an address on Nephritis, after which he will lead a discussion of Medical Economics. Also scheduled for discussion of Dr. Peters' papers are Francis Cenedella, M.D., of Moline, and John I. Marker, M.D., of Davenport.

James Dunn, M.D., Secretary

DEATH NOTICES

Blythe, Edward Ellsworth, of Riverside, aged sixty-seven, died November 5 in the Washington County Hospital of pneumonia. He was graduated in 1904 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Washington County Medical Society.

Crabbe, Albert Andrew, of Traer, aged sixty-seven, died suddenly November 29 of heart disease. He was graduated in 1900 from Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a life member of the Tama County and Iowa State Medical Societies.

Gingles, William Wilson, of Castana, aged seventy-one, died November 10 after an illness of more than a year. He was graduated in 1890 from the Kentucky School of Medicine, Louisville, and at the time of his death was a member of the Monona County Medical Society.

Hall, Clarence Henry, of Cherokee, aged sixty, died suddenly November 30 after a heart attack, although he had suffered from a heart ailment for several years. He was graduated in 1904 from the Medico-Chirurgical College of Philadelphia, and had long been a member of the Cherokee County Medical Society.

Redmond, William Henry, of Cedar Rapids, aged fifty-three, died suddenly November 12, after a heart attack. He was graduated in 1910 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Linn County Medical Society.

Terrill, Jay Standley, of Bedford, aged fifty-six, died November 17 after an illness of several months. He was graduated in 1906 from Ensworth Medical College, St. Joseph, and at the time of his death was a member of the Taylor County Medical Society.

GREETINGS FROM THE SPEAKERS BUREAU

The Speakers Bureau Committee wishes to extend its sincere thanks to the members of the newly organized Committee on Postgraduate Medical Education, to the local chairmen of the postgraduate courses, namely, Dr. J. C. Painter of Dubuque, Dr. W. E. Walsh of Hawkeye, Dr. A. A. Schultz of Fort Dodge, Dr. F. X. Cretzmeyer of Emmetsburg, Dr. G. E. Vermeer of Sheldon, Dr. H. D. Jarvis of Chariton, Dr. R. A. Becker of Atlantic, Dr. W. S. Reiley of Red Oak, Dr. A. L. Nielson of Harlan, Dr. R. S. Grossman of Marshalltown, and to the lecturers throughout the state, particularly the faculty of the College of Medicine at the State University of Iowa, for the time and effort they have given toward making the postgraduate courses a success.

The committee is also grateful to the many doctors who have helped in the work of presenting programs before county medical societies, who have given talks before many organizations, and who have helped make possible the weekly radio broadcasts. The spirit of cooperation evidenced between the physicians of

the state and the Speakers Bureau activities has made the work of the committee a pleasure.

So at this Holiday Season, it is the wish of each member of the Speakers Bureau Committee that all those physicians will enjoy a very Merry Christmas and A Happy and Prosperous New Year.

L. C. Kern

W. R. Brock

S. D. Maiden

James Dunn

Earl B. Bush

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees

November 20, 1938

The Board of Trustees of the Iowa State Medical Society met at noon Sunday, November 20, at the Hotel Fort Des Moines in Des Moines. Those present were Drs. O. J. Fay, L. R. Woodward, and John I. Marker. The October and November bills were duly authorized; exchange of JOURNALS in accordance with two requests was recommended, and meeting adjourned.

Meeting of the Program Committee

November 20, 1938

The Program Committee of the Iowa State Medical Society met at ten a. m., Sunday, November 20, at the Hotel Fort Des Moines in Des Moines. Those present were Drs. A. W. Erskine, F. A. Hennessy, Robert L. Parker and Ben G. Budge. Outlines of the three morning sessions of the 1939 annual meeting were formulated, and the afternoon section meetings planned. Meeting adjourned at twelve o'clock.

Meeting of the Executive Council

November 20, 1938

The Executive Council of the Iowa State Medical Society met at two p. m., Sunday, November 20, at the Hotel Fort Des Moines in Des Moines. Those present were Drs. A. W. Erskine, F. A. Hennessy, O. J. Fay, J. I. Marker, L. R. Woodward, Robert L. Parker, L. L. Carr, C. H. Cretzmeyer, F. P. Winkler, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, C. A. Boice, H. A. Spilman, J. G. Macrae, M. C. Hennessy, W. L. Bierring, E. D. Plass, Fred Moore, R. D. Bernard, L. A. Taylor, R. H. McBride, Lee F. Hill and W. R. Brock.

Business under discussion was, 1. a proposal that legislation requiring premarital and prenatal serologic examinations be supported; 2. approval of the report of the Committee on Medical Education and Hospitals in regard to the state mental hospitals; 3. a change in ruling to permit junior medical students to act as locum tenens for physicians desiring to take refresher courses during the summer; 4. support of an enabling act to permit non-profit insurance for hospitalization; 5. policy regarding immunization program; 6. approval of report of Clinical Committee; and 7. plan for postgraduate teaching of obstetrics.

Meeting adjourned at four-thirty p. m.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. MCCLINTOCK, Iowa City

DR. R. T. LENAGHAN, Clinton

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

Transcript of Case Histories—1849-1856

Prepared by DAVID HUTCHINSON, M.D., 1812-1891

Recently the Iowa State Medical Library received an interesting gift from the Pottawattamie County Medical Society, consisting of two books of transcripts of case histories prepared by David Hutchinson, M.D., of "recorded medical facts and observations of diseases treated in 1849 to 1856." The foreword at the beginning of these records closes with the words, "May the God on whom I rely for help so strengthen my judgment, that I may record truth." Dr. Hutchinson practiced in Winterset, Iowa, from 1863 to 1889, at which time he moved to Council Bluffs, where he resided until his death in 1891. The following case histories are submitted in Dr. Hutchinson's exact words to indicate the careful manner in which they were recorded.

CASE NO. 1. ERYSIPELAS

"March 28, 1850. Met Doctor Lockhart in consultation, in the case of Mrs. Boles; she was attacked with violent rigor on the 23rd instant, followed by febrile reaction. She had assisted at the laying out of the corpse of Mrs. Brown who had died of erysipelatus peritonitis seven days after parturition, on the 22nd instant. Mrs. Boles had a slight scratch on one finger where the erysipelas first showed itself, which shortly extended in a red line up the arm and which was exceedingly painful; a slight puffy swelling also made its appearance on the right ankle, which speedily extended in a red line up the calf of the inside of the leg, pursuing the course of the absorbents. The left leg was similarly affected. Also an erysipelatus spot had made its appearance on the right elbow, the progress of which appeared to have been cut short by the application of collodion. At present she is laboring under great constitutional irritation, pulse 120, soft, nervous excitement with a disposition to prostration. She had been bled at the onset of the disease, had taken

mercurial cathartics, etc., order calomel 10 grs., serpentasia and carb. ammonia. On the 30th she died, no doubt from the constitutional irritation produced by the absorption of an animal poison into the system from the corpse she had assisted in handling. This case resembles the cases of dissection wounds described by Travers in his work on constitutional irritation."

CASE NO. 2. TUBERCULOUS MENINGITIS

"December 1, 1851. Minerva Reardon, aetat twenty-three years, has been in bad health for some months, eight or nine. When I first saw her it was at a meeting about two months ago. My attention was called to her on account of what was supposed to be a fainting fit. Her eyes looked wild and glistening, and she appeared to be in a state of mental derangement. She had been laboring under cough and purulent expectoration for some months, the lungs on auscultation give evident signs of tubercular development; the menses had been suppressed for several months, and she had hectic fever, pulse 120 per minute. She was placed on cod liver oil and hydriodate potassium, which produced some little improvement in her general health and strength, and some abatement of her cough. She would have occasional attacks of apparent mental derangement, which would last only for a few hours. About three weeks ago she began to complain of headache which was at times rather severe, accompanied with vomiting and delirium. She was bled to 8 to 10 oz. When I saw her again she had lost the power of emptying the bladder, and appeared maniacal. She is blistered on the nuchae without relief; during the period that the head has been affected she has been free of cough, and the force of the disease thrown on the brain, although there is crepitus and crackling in the lungs on auscultation and

she must shortly die. In this case there are tubercles on the membranes of the brain as well as in the lungs; so soon as the brain became involved, the pulse diminished in frequency, and is now about 90 and labored; pressure on the brain produces slowing of the pulse of a peculiar character which might be called cerebral pulse. It is evident that the membranes and surface of the brain is the part affected, from the furious and raving delirium. In short it is tuberculous meningitis. She died on the morning of the third of December."

CASE NO. 3. RHEUMATIC FEVER ENDOCARDITIS

"February 18, 1853. Lawrence Worth, aetat eighteen years. Taken with rheumatic fever, pain and swelling in joints, pulse full and strong, tongue furred, bled 24 oz. Gave Cal. 2 grs., pulv. Doveri 5 grs., ipecac 1 gr., every four hours. Vin sem. colchicum 30 min. every four hours. February 19. Much the same state of things, no evacuation from bowels, cathartic of sulph. magnesium and colchicum continue treatment. February 20. Cathartic acted violently. Had copious watery evacuations, pulse feeble and intermittent, action of heart very irregular, there exists endocarditis. Give cal. 1 gr., morp. $\frac{1}{8}$ gr., ipecac $\frac{1}{2}$ gr., every three hours. Evening - has had several dark consistent evacuations from bowels. February 21. Rested tolerably through the night, complained of distress at heart, intermission every five beats of heart with a very obstructed action; pulse not so full and tense as before; tongue cleaning a little; continued calomel, ipecac and morphine every three hours, and 10 min. colchicum wine every three hours. February 22. Had a very good night, free from acute pain; action of heart not intermittent, slight bellows murmur; regurgitation of left side of heart; pulse softer 90; tongue cleaning and getting moister; less pain in extremities. Continue treatment; give 5 min. tincture of digitalis every five hours. February 23. Improving finely. Cardiac sounds diminished, pulse 90; tongue cleaning; free from pain. Continue colchicum. Gums getting sore. He gradually improved under the alterative treatment and in two weeks from the beginning of the attack was nearly free from disease."

CASE NO. 4. CANCRUM ORRIS SUPERVENING ON DYSENTERY

"I have seen but one well marked case of cancrum orris during nearly eighteen years practice in this state (Indiana). It occurred in September, 1853. A youth, aetat eight years, was taken August 26 with symptoms of dysen-

tery, which was then prevailing endemically, especially among children; his brother nearly two years older had died a few days before with it, the characteristic feature of which was excessive hemorrhagic discharges from the bowels under which he rapidly sank. I mention this circumstance, to show not only the virulence of the disease then prevalent, but also as a clue to the constitution of the family. There were no unusual symptoms in the boy's case further than the intractable character of the disease. The tongue was red, smooth, glossy and dry. He had a good deal of gastric irritation, increased frequency of pulse, febrile heat, and frequent bloody mucous stools of a shreddy appearance accompanied with much pain and toxemia, the stools occurring as frequent as every hour and half hour. Occasionally the evacuations were of a dark bottle-green appearance, alternating with those of a bloody mucous shreddy character for the first five days. He was treated with opiate and small doses of hydrargyrum cum creta when fearing hemorrhage, as in his brother's case. The treatment was changed to opium and plumbi acetate. The bowels then to some extent quieted by this treatment, but the stools remained bloody and shreddy, the general symptoms being of a low typhoid character, subsultus tendinum, sordes on the teeth, low muttering delirium and dry red tongue, indicating ulceration of colon and also of the ilium. Nitrate of silver and opium in appropriate doses were given every two hours; under this treatment the discharges became much thicker but they continued of a flakey shreddy appearance, and still very frequent, amounting from twelve to twenty, every twenty-four hours. He was also given wine and quinine, the quinine seemed to increase his nervous symptoms but the wine produced a happy effect, lowering the frequency of the pulse and quieting the nervous agitation. At the end of the second week of his illness, a small swelled spot appeared, of a dark ashy appearance, on the gum of the lower jaw on the right side opposite the first molar tooth. Nitrate of silver was applied to it freely and he was given wine, quinine, and carbonate of ammonia, together with the opium and nitrate of silver pills, as much as could judiciously be administered; he took also chlorate of potassium, five grains every three hours. In two more days a large slough was thrown off from the gum, three quarters of an inch in length which denuded the two first molar teeth and the alveolar process of the jaw; the other parts of the mouth appeared entirely sound. Nitrate of silver was freely

applied daily to the diseased part to prevent its extension; for three days it appeared to go no further and it was eagerly hoped that it would cease. The mouth was closely watched, the parents being appraised of the highly dangerous and unmanageable character of the disease. It however soon became evident that there was a small circumscribed swelled spot on the cheek on the lower jaw, immediately opposite the disease of the gum. It was of an ashen color, with a border of inflammation extending some distance around it. It was further evident that the sloughing of the gum was still progressing. He complained of acute lancinating pain in that side of the face. On the nineteenth day of his illness, another slough came off the gum, which was followed by alarming hemorrhage which continued for three hours; in despite of styptics of various kinds with pressure applied to the part, and the internal administration of astringents, plumb acetum, gallic acid, etc., the inflammation of the cheek continued violent; he complained of keen lancinating pains in it and by next day a dark spot was observable on the outside of the cheek, corresponding to the situation of the ash colored surface inside. Externally the cheek was smooth and glossy for a space about the size of a silver dollar. The dark spot externally enlarged rapidly and became hard like a piece of crisp leather. In twenty-four hours more the inflammation extended to the angle of the mouth, under the jaw of the diseased side and to the outer angle of the eye. The gangrenous spot was larger than a silver dollar and very black. The foetor was so intolerable that few could stay in the room, although it was fumigated with chloride of lime, and chloride of soda was applied to the mouth and jaw. His pulse became very feeble, he had involuntary evacuations and some hemorrhage from the bowels, low muttering delirium and died on the twenty-third day of his illness. Thirty-six hours before his death, a small red spot appeared on the outside of the upper lip under the left nostril, which continued to spread, till it attained the size of a ten cent piece. It had a dark colored centre, approaching to the aspect of the spot on the right side on the inside of the cheek. All other parts of his mouth were entirely sound, the gums being firm to the teeth."

In a third book, Dr. Hutchinson had prepared a "general index of authors and subjects for reference and future investigation, begun December 2, 1853". Items from this index will be carried in a future issue of the JOURNAL.

BIOGRAPHY

David Hutchinson was born July 27, 1812 in Lesma Mago, Scotland; and died March 31, 1891 in Council Bluffs, Iowa. He was married March 23, 1838, to Mildred Mann of Kentucky, and eleven children were born to this union. He was married a second time; on April 2, 1856 to Elizabeth Clark Brownell. He studied medicine at the University of Edinburgh in 1828 and 1829, and received his doctor of medicine degree from the Ohio Medical College, Cincinnati, in 1833. Dr. Hutchinson returned to the institution in 1842 for additional postgraduate work. On June 27, 1842, he became a naturalized citizen of the United States.

Dr. Hutchinson entered the practice of medicine in Steubenville, Ohio in 1833, and later moved to Indiana, practicing in Shelbyville from 1836 to 1839, and in Morrisville from 1840 to 1863. He served the Indiana State Medical Society as president during 1859 and 1860. Dr. Hutchinson came to Winterset, Iowa in September of 1863, and continued to practice there until 1889, when he moved to Council Bluffs, intending to retire. However, the severe epidemic of La Grippe forced him to resume practice, until his death on March 31, 1891. He was awarded the annual Fiske Medical Prize of \$100.00, offered by the Rhode Island Medical Society, June 3, 1857, for the best dissertation on "What are the causes and nature of that disease incident to pregnancy and lactation, characterized by inflammation of the mouth and fauces, usually accompanied by anorexia, emaciation and diarrhoea, and what is the best mode of treatment?" The motto of the author was "Wheat from the fields of science and cockles from my own farm."

In addition to his medical career, Dr. Hutchinson had an honorable record of military service during the Civil War, from December 12, 1862 to August 8, 1863. He was granted an Iowa state physician's certificate No. 189, on September 8, 1886, signed by W. S. Robertson, M. D., president of the Iowa State Board of Medical Examiners. All records indicate that he was an ardent student, and kept up at all times fully abreast with medical progress. His library contained the leading works of his period, and is now in the medical division of the Council Bluffs Carnegie Library.

Grateful acknowledgment is made to Dr. Vernon L. Treyner of Council Bluffs, for assistance in collecting biographical and other facts connected with the life of Dr. David Hutchinson.

Walter L. Bierring, M.D.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

- APPLIED ANATOMY**—By Robert H. Miller, M.D., associate professor of anatomy, University of Tennessee, College of Medicine. Lea and Febiger, Philadelphia, 1938. Price, \$6.50.
- DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS**—By George W. Norris, M.D., formerly professor of clinical medicine, University of Pennsylvania; and H. R. M. Landis, M.D., formerly professor of clinical medicine, University of Pennsylvania. Sixth edition. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.
- DR. COLWELL'S DAILY LOG FOR PHYSICIANS**—A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1938.
- ENDOCRINE THERAPY IN GENERAL PRACTICE**—By Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1938. Price \$2.75.
- INTERNAL MEDICINE: ITS THEORY AND PRACTICE**—Edited by John H. Musser, M.D., professor of medicine, Tulane University of Louisiana, School of Medicine. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$10.00.
- PLASTIC SURGERY**—By Arthur Joseph Barsky, M.D., D.D.S., associate surgeon in charge of the Department of Reconstructive Surgery, Beth Israel Hospital, New York, N. Y. Illustrated. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.75.
- HUMAN PATHOLOGY**—By Howard R. Karsner, M.D., professor of pathology, Western Reserve University, Cleveland, Ohio. Fifth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$10.00.
- THE PNEUMONIAS**—By Hobart A. Reimann, M.D., professor of medicine, Jefferson Medical College, Philadelphia. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.
- PRACTICAL MICROBIOLOGY AND PUBLIC HEALTH**—By William Barnard Sharp, M.D., professor of bacteriology and preventive medicine, Medical Department of the University of Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, \$4.50.
- THE PRINCIPLES AND PRACTICE OF OBSTETRICS**—By Joseph B. DeLee, M.D., professor of obstetrics and gynecology, emeritus, University of Chicago. Seventh edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$12.00.
- SURGICAL PATHOLOGY**—By William Boyd, M.D., professor of pathology, University of Toronto. Fourth edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.
- THE 1938 YEAR BOOK OF PHYSICAL THERAPY**—Edited by Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1938. Price, \$2.50.

BOOK REVIEWS

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS

By George W. Norris, M.D., formerly professor of clinical medicine, University of Pennsylvania; and H. R. M. Landis, M.D., formerly professor of clinical medicine, University of Pennsylvania. Sixth edition. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$10.00.

This reviewer believes the authors have presented impartially all that has been and is now thought of value in pathology of the thoracic cage. All important methods of clinical investigation in this book have been exhaustingly described. There are hundreds of clinical and pathologic photographic studies that are practical and add much to the interest of the book.

In Parts I and II, Dr. Norris is classical in his detailed description of inspection, palpation, percussion and auscultation and their pathologic significances. These sections deal solely with examination of the heart and lungs. There is a chapter by Dr. Montgomery devoted to transmission of sound through the chest. Dr. McMillan has rewritten the chapter on electrocardiography and cardiac arrhythmias. The chapter on heart murmurs should be read by every practitioner.

Parts III and IV by Drs. Norris and Leopold deal with etiology, morbid anatomy, pathology, symptoms and diagnosis of all diseases peculiar to the bronchi, lungs, pleurae, diaphragm, and heart. Here they give an elaborate description of major diseases con-

fined to the thorax and lucidly interrelate their pathologic and clinical pictures.

This is an excellent, advanced, practical text for medical students with no lessened value as a book of reference for practitioners. J.W.C.

HUMAN PATHOLOGY

By Howard T. Krasner, M.D., professor of pathology, Western Reserve University, Cleveland, Ohio. Fifth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1938. Price, \$10.00.

Dr. Karsner has written a one volume text on human pathology. As in any single volume text on pathology a complete discussion of all phases of gross and microscopic pathology would be impossible. He has, however, carefully covered every essential phase and, for those who desire more complete information on any topic, he has appended each chapter with a very complete list of references. They have been carefully selected and the author has included the most important references on every phase of pathology.

The text is divided into two parts; the first deals with general pathology and the second with systemic pathology. In the twelve chapters of the first section the author gives a very concise discussion of the general phenomena of disease, extrinsic and intrinsic causes of disease. His explanation of pathologic pigments includes many interesting phases and he lays particular emphasis on pulmonary silicosis. In the chapter on degenerations he discusses the very re-

cent work on fatty metamorphosis. He points to the reclassification of amyloidosis and gives a very clarifying consideration. As one passes from chapter to chapter the reader is impressed with the vast amount of new material added and the fact that all controversial questions are discussed in a very clear manner. Part Two contains some ten chapters in which a general discussion of various pathologic changes which may be found in each specific system is carried on. The chapters on the hematopoietic system and ductless glands offer very interesting and instructive reading. There is an effort to correlate pathologic changes with the clinical picture.

The book is in its fifth edition and every chapter has been revised and brought up to date. The literary style is excellent and easy to follow. The text has been well amplified by well chosen illustrations, some of which are colored plates. As a text and a reference book it can be recommended to both the student and the physician.

A.C.S.

THE PNEUMONIAS

By Hobart A. Reimann, M.D., professor of medicine, Jefferson Medical College, Philadelphia. W. B. Saunders Company, Philadelphia and London, 1938. Price, \$5.50.

The title of this book is in itself a challenge to the tradition of one hundred years. It should arrest the attention not only of the internist and general practitioner, but profoundly influence the teaching of the undergraduate student of medicine. The favorable reception and wide reading which this monograph deserves should mark the dawn of a new day in our conception of acute pulmonary inflammation.

Without neglecting the clinical and morphologic classification of the pneumonias, the author has separated these acute inflammatory processes on an etiologic basis into about fifty varieties or types. He has, to a great extent, avoided confusion by grouping these types into four logical categories.

It is becoming more and more apparent that success in the prevention and treatment of the pneumonias is proportional to our understanding of responsible etiologic agents, rather than to morphologic anatomy or clinical signs. Dr. Reimann has in 380 pages successfully epitomized our present knowledge of this progress.

F.H.L.

DR. COLWELL'S DAILY LOG FOR PHYSICIANS

A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1938. Price, \$6.00.

The Daily Log consists of blank forms arranged with great care for brevity, ease of understanding, accuracy and comprehensiveness. It is truly all that

the publishers claim it to be. Space provided in the regular Log accommodates an average practice for a calendar year, with thirty-six lines allowed for each day. Physicians with larger practices will want to use the Double Log, issued in two volumes, with seventy-two lines of recording space each day.

The book may be used as an appointment book, each daily page carrying the hour, the name of the patient, service rendered, whether cash or credit, and the amount received. At the end of each month one finds space for listing inoculations, a business summary, personal account, surgical record, narcotics, and social security taxes. Pages are provided in the back of the book for an obstetric waiting list, notifiable diseases, record of deaths, and an annual business summary. The last named item will include all the basic amounts needed in estimating each year's income tax.

The book is compiled on a loose-leaf plan, and durably and attractively bound in fabricoid. One can recommend this volume without reservations for the busy general practitioner who desires a complete, systematic, time-saving device for the maintenance of his office records.

D.K.

DISEASES OF THE NOSE, THROAT AND EAR

By William L. Ballenger, M.D., late professor of otology, rhinology and laryngology, College of Medicine, University of Illinois; and Howard C. Ballenger, M.D., assistant professor of otolaryngology, Northwestern University School of Medicine, Chicago. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, \$11.00.

This seventh edition of Ballenger is a faithful and successful attempt to modernize an old standard text. By omission of obsolete material and opinion, and emphasis on subjects of proved worth this new edition gains in authority. Its terseness and compactness do not detract from its readability.

Many chapters have been entirely rewritten and there is a wealth of new material on such subjects as petrositis, deep neck infections, physical therapy and the neoplasms of the head and neck. With the exception of a few, the illustrations are informative and well coordinated with the text. The index is unusually complete. However, in this, as in comparable texts it is the reviewer's opinion that more space could have been used profitably in discussion of the purely medical phases of otorhinologic treatment, particularly in view of the recent advances in chemotherapy and serotherapy.

As a test of the completeness with which this text has covered its field, a number of subjects were chosen at random by the reviewer. Using coverage and excellence of discussion as criteria this book compares more than favorably with other standard texts of comparable scope and date.

J.V.T.



